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A Longitudinal Analysis Of Job Skill Trends In The MIS Job Market

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Introduction

A stream of research based on examination of newspaper position advertisements for MIS professionals has provided evidence of the types of job skills most demanded in today's rapidly changing job market (Litecky and Arnett, 1992; Arnett and Litecky, 1994; and Prabhakar, Litecky and Arnett, 1995; Litecky, Arnett and Prabhakar, 1995; Todd, McKeen and Gallupe, 1995; Trower, 1995; Litecky, Prabhakar and Arnett, in press). The result of this research stream is important because recent technical, economic and socio-political trends have apparently combined to produce a rapidly changing job market for MIS professionals. As these trends change the job market, new job skills are required. MIS professionals have to keep their skills updated to stay competitive in a changing job market. The changing job skills also holds implications for academia. MIS curricula may need to change to reflect the changes in the MIS job market to produce graduates in high demand.

The interesting question here is "which skills are most in demand?" To begin to answer this question, this report analyzes newspaper MIS position ads that appeared on a specific day for each year between 1992 and 1996 as part of a longitudinal research program assessing the skills required in the MIS job market.

Methodology

The job market for MIS personnel is studied using position advertisements placed in newspapers as an indicator of the status of the MIS job market. Adaptation of this methodology to MIS job markets is based upon the previous empirical work cited above, as well as Athey and Plotnicki (1992), Winer (1989), Todd, McKeen and Gallupe (1995) and Trower (1995). In order to provide a contrast and partial replication of the preceding research, newspaper ads from selected cities were used to cover the geographic regions of the U.S. For consistency, all advertisements were collected from a Sunday issue of the newspapers in the month of April 1992, 1993, 1994 and 1995. 1996 data has been collected in April of this year to maintain consistency with prior research. The classification scheme used in the earlier studies is being modified to include leading edge job skills to reflect new and emerging technologies.

Present State Of Research

1996 data has been collected and is being analyzed. Approximately 1200 want ads from 1992, 1300 from 1993, 1800 from 1994 and 2060 from 1995 have already been analyzed. The final results should be available for the convention. The major skills identified from an analysis of the available data were used to develop specific job skills oriented research propositions. At the convention, a more detailed analysis of the job skills and their implications will be presented.

Research Propositions

Based on the literature and analysis of over 8,000 want ads, each requesting specific job skills, the overall MIS job market as well as each of the major job skills (Litecky, Prabhakar and Arnett, 1996) is evaluated and research propositions are put forth in each of the following sections. Note that skills are not mutually exclusive as one job ad may list multiple job skills.

The Job Market

The economic recovery that became apparent in 1993 resulted in a significant upswing in the number of available MIS related jobs in both 1994 (Prabhakar, Litecky and Arnett, 1995) and 1995 (Litecky, Prabhakar and Arnett, 1996 in press). It is expected that this trend will continue into 1996. This leads to the first proposition.

P1: The number of open positions for MIS professionals will increase in 1996 relative to preceding years.

Networks

In 1995, networking jobs accounted for the largest share of all the positions advertised (43%). Jobs that specified network, Novell Netware, LAN, WAN, Internet and client server skills are included in this category. Given the interest in networking that has resulted from the explosive growth of the Internet, as well as the growth in popularity of client server systems this trend is expected to continue.

P2: The demand for networking skills in the MIS job market will increase relative to that in previous years.

PC Skills

The demand for PC skills was at a high level (22.9%) in 1993 and 1994 and continued to grow in 1995 to 31% of all the positions open. Skills in this category include PC related skills like MS-DOS, PC-support, PC applications and Macintosh support. The increasing popularity of LANs and client server networks with PC-based clients adds to this demand. The demand for PC skills is expected to increase.

P3: The demand for PC skills in the MIS job market will increase relative to that in previous years.

Windows

The demand for Microsoft Windows skills grew by nearly 4% from 1993 to 1994 to reach a total of 18.7% of all jobs. This category does not include X-Windows and Open Windows which were categorized as Unix related skills. Windows NT was included in this category until 1995, but is being moved to a separate category in 1996 to reflect the rising popularity of this operating system. Growth in demand for Windows accelerated in 1995 to third place and became required for 26% of all jobs. The introduction of Windows 95 last year is expected to increase the demand for Windows skills.

P4: The demand for Windows skills in the MIS job market will increase relative to previous years.

Unix

Unix has made its presence felt in corporate computing. Unix skills were called for by a quarter of all MIS jobs in 1993 and 1994 but demand fell somewhat in 1995 to 22%. Demand is expected to continue a slow decline in 1996 with the rising popularity of Windows NT as a competitive alternative to Unix as an enterprise computing platform.

P5: The demand for Unix skills in the MIS job market will decrease relative to previous years.

Object Oriented

The demand for skills related to object oriented programming and systems analysis has grown rapidly from only about 3 % in 1993 to become the fifth most wanted job skill in 1995 demanded in 21% of open

positions. Object oriented programming languages such as C++ and Smalltalk as well as visual programming environments like Visual Basic and Delphi are included in this category. With the increasing popularity of visual object oriented programming environments, this trend is expected to continue.

P6: The demand for object oriented skills in the MIS job market will increase relative to previous years.

Relational Database

Skills related to large scale relational database skills were required by more than 25% of all jobs in 1993, declined slightly in 1994 and fell drastically in 1995 by 9% to only 18%. This category relates only to skills for mainframe, midrange and server databases most often identified by product names such as Oracle, Sybase, Ingres and SQL server. PC databases were categorized separately. A shift to PC databases is expected to result in a decrease in the demand for relational database skills.

P7: The demand for relational database skills in the MIS job market will decrease relative to previous years.

Conclusions

It appears the skills demanded by the MIS job market has undergone significant changes in the last five years. The demand for traditional skills like mainframe computing and COBOL programming skills are being replaced by networking skills and PC skills. These findings should be of interest to MIS academics and professionals for guidance on the skills needed in today's job market. These findings may also serve as a barometer for changes that might be introduced in the future. Additionally, these findings, based on job market data, may provide an empirical basis for curriculum changes much in contrast to normatively oriented approaches to curriculum definition.

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