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The Impact of Technology Training Programs

Case Study: Microsoft Certified Systems Engineer Training

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Training for the Digital Age

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Effective participation in the American political economy has always been substantially dependent upon an education that goes beyond basic verbal and mathematical skills. While these are essential, people who find success above the average also acquire a less codified knowledge of how the system works to provide channels of empowerment and opportunity. Developing this sense of what it takes to make one's way in a rapidly changing economy is principally a matter of self-education, keeping up to speed with emerging social, economic, and technological trends. And once the individual determines a direction in which to move, the next step is finding the tools to make the most of available opportunities. In an economy increasingly influenced by information technologies, training in the technical skills demanded by potential employers has become central to professional advancement.

Technical training programs such as those for Microsoft Certified Systems Engineers (MCSEs) are serving as a gateway to new-economy opportunities, allowing motivated and disciplined people to bypass college on the route to rewarding jobs. For tech-involved companies seeking recognizably prepared workers, the advantages are clear. For people unable to afford college tuition, workers looking to transition into digital areas of the economy, and individuals wanting to add a digital career track to the one they are moving on already, information technology training programs are cost-effective and time-saving educational pathways. Focused instruction in networking, databases and other computing tasks means that program graduates are prepared to be immediately productive and later take on more advanced responsibilities.

While the implications of IT training for individual economic opportunity and enhanced productivity seem relatively straightforward, the broader consequences for the shape of society and the nature of the people who comprise it are also of great interest. Because technology education can lift people into the knowledge class without subjecting them to significant expenditures for higher education, the proliferation of MCSE and similar programs could be seen as empowering a broader segment of the workforce to participate in an increasingly dominant sector of the economy.

Seen from the general perspective of the two competing core principles of American self-understanding, individual liberty and equality, one might speculate that the movement toward an information-centered economy and the sort of technical education suited to it harmonizes the two concepts. On one side the skills required for success at certain levels of the digital economy are skills that a great many people can acquire, given discipline, self-motivation, and the accessibility of the requisite hardware. This shared realm of technical knowledge may put many different sorts of people on a more level playing field with respect to opportunities in the economy. At the same time, given the apparent tendencies toward decentralization of business models inherent in the spread of information technology, there would seem to be more space for individualized participation in a dynamic economy even in corporate environments that strive to maintain traditionally hierarchical organizational structures. Setting aside the more wildly blooming varieties of entrepreneurial activity that depend on the efforts of audacious individuals

or small groups, we are left with what will eventually become the mainstream, the establishment, of the information economy. It is in this emerging mainstream that IT training programs are likely to have their greatest impact.

Information technology training programs also promise to change the landscape of education in the United States, accentuating trends that have existed for many years. Given America's penchant to make knowledge productive -- to put theories to work -- as quickly as possible, it is not surprising that the rhetoric surrounding education issues is focused almost exclusively on the idea of producing people who are prepared to enter the workforce and be productive. Even the bachelor of arts degree is viewed essentially as a means to the best possible job, and except for a small minority, the university is not a place where the liberal arts are pursued for their own sake. In this context, the proliferation of new forms and institutions of education aimed at certifying people as potential contributors to the information-based sectors of the economy should not have been an unforeseen outcome.

But what kinds of people are emerging from these new modes of education in a tech-heavy information society? Defenders of the traditionally conceived college education, even where they give up on making claims about forming a well-rounded person, still maintain that college is where one cultivates analytical capabilities in a wide range of areas, sharpening one's overall abilities to frame questions and solve problems. The argument is that a college education, which can still include technical training, makes for a better worker than a strictly limited technical education that doesn't sufficiently recognize the imperatives of creativity and broader perspective that operate even in a big organization. On the other side, supporters of IT training programs argue that because the high-tech world presents distinctive problems and approaches generated by the technology itself, the traditional college curriculum does not assist those who would enter the digital economy.

The observer with no institutional axe to grind, however, will ask if people with computer training truly become more individually empowered in a fashion consequential for their participation in the economy and polity. Such an observer will wonder if instead these people are merely better prepared to enter a sector of the economy that demands in short order a workforce qualified to perform specific kinds of tasks. Does the digital age promise some significant new manifestation of individualism and opportunity, or is it just producing a different kind of worker? No one disputes that the internet has enabled an unprecedented proliferation of communication, whether it be about business or freewheeling personal expression. We might well think that better prepared employees are empowered to take advantage of opportunities arising in a fast-emerging and quickly changing area of the economy. Nevertheless, we should consider whether that kind of empowerment represents a significant change in the overall social structure or if it is a substantially ordinary result of expected adjustments in education and training intended to meet the uncompromising imperatives of a surging technological and economic trend.

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Case Study: Microsoft Certified Systems Engineer (MCSE) Training

The nature of American business and the world market, and the attitudes of the actors within them, have undergone momentous transformations in the last ten years. The traditional norms of individual advancement in the workforce have, in turn, changed as well.

The purpose of this study is to report the impact of IT training. The demand for workers has spurred thousands of computer training programs to enhance computer users' database, networking and PC operating skills. The MCSE (Microsoft Certified Systems Engineer) program has been one of the most successful in the country and has become an accepted standard for PC proficiency. At a fraction of the cost of college, MCSE graduates have been able to transition immediately into hi-tech careers with remarkable success.

The Study:

To illustrate the impact of MCSE training, we solicited comments from human resource specialists in three major groups of companies: Fortune 500, Inc 500, and new tech start-ups.

Fortune 500

Each year Fortune Magazine releases its list of the largest, most profitable companies in America. By examining the total revenues, profits, assets, market value, and earnings per share, Fortune generates a rank order list of America's most powerful companies. Fortune's list has long been regarded as the industry standard for measuring the strength of both individual companies and the American economy. This study comprises 135 companies in the Fortune 500 randomly selected from the list published by Fortune Magazine, April 27, 1998.

Inc. 500

Inc. Magazine, like Fortune, releases an annual ranking of 500 companies. The Inc. 500 is a comprehensive list of the fastest growing privately held U.S. companies. The annual list is an exclusive report on the companies and CEOs who are changing the face of American business. This is mainly a list of newer companies on the American business front. Microsoft, Oracle, and Gateway were previously Inc. 500 companies. This study comprises 135 companies from the Inc. 500 randomly selected from the list published by Inc. Magazine in October 1999.

Tech Start-ups

Tech start-ups are among the fastest growing group of companies in need of IT talent. A randomly selected list of these companies was obtained from a list of all companies that went public between 1 January 1998 and 20 October 2000 and are classified under the category of Internet/Software companies. We interviewed 134 human resource professionals within these firms.

A random sample of companies was drawn from each of the three pools in order to gain usable data. Speaking to the human resources manager of every Fortune 500, Inc. 500, and Tech Startup companies would, of course, have been the most comprehensive approach, but unfortunately that was not a possibility for our study. Many companies, particularly Fortune 500 companies, have standards and regulations in place forbidding them from taking part in surveys and research studies and from commenting on hiring practices. Furthermore, many companies will only take part in a survey through their public relations or media relations department. It was important to include the feedback of human resource specialists in the study because these are the people who perform the initial screening of prospective employees and have first-hand knowledge of the company's hiring practices. Two experienced telemarketers were charged with conducting the surveys over the course of a two-week period in November 2000. Having a

small number of surveyors was advantageous and, as it turned out, essential, because when interviewing high-ranking individuals at major corporations, several messages and follow up calls were often necessary. Furthermore, limiting the number of surveyors made for uniformity across interviews.

The interviewers were given a randomly selected list of phone numbers at the corporate headquarters of each company. When contacting the company, the surveyors asked to be transferred to the human resources official in charge of hiring and/or recruiting, and asked each the same five questions:

- 1) Are you familiar with MCSE, the Microsoft Certified Systems Engineer program?
-If "Yes," they moved on.
-If "No," the surveyors asked who in their office would be familiar with it?
- 2) Is MCSE certification an acceptable qualification for positions in your organization?
- 3) Do you feel that MCSEs, when compared to employees with 4-year college degrees, are **More / Equally / or Less** successful in tech careers at your company?
- 4) Does your company provide incentives for current employees to become certified?
If the respondent was unsure-"For example a bonus or tuition reimbursement."
- 5) Are MCSEs successfully pursuing careers at your firm?

Findings

Table #1:
Percentage of Affirmative Responses for Fortune 500, Inc. 500, & Tech Start-ups.

Are you familiar with MCSE Certification?	72%
Is MCSE an acceptable qualification for work at you firm?	56%
Are MCSEs Equally/More Successful, or are they Less Successful?	53%*
Does your company provide incentives to become an MCSE?	40%
Are there MCSEs working at your firm?	55%

*Indicates the percent of respondents who feel MCSEs are Equally or More Successful than individuals with a 4-year degree.

Table #1 provides the raw data indicating the percentage of individuals who responded "Yes" to the previous five questions. Most notably, almost three of every four of the human resource managers and specialists that we spoke with had at least a basic familiarity with the MCSE training and certification process. Equally impressive is that fact that more than half of companies have MCSEs working for them. With this data to work with, it is tempting to say that it is indeed true that MCSE has had an impact not only on people's lives but on the American business community.

One possible problem with looking at this data in the way we are, is we are potentially guilty of making a non-equivalent comparison. In other words, drawing conclusions and making comparisons between companies whose focus is on new technology, and companies whose industry type varies from restaurant chain to automobile manufacturer, may be ill advised. That is to say, throwing Tech Start-ups in with Fortune 500 and Inc. 500 companies may potentially skew the data. The use of Tech Start-ups in our survey, we felt, was justified. Technology firms

have been a driving force in the market for the last decade, and because we were testing not only familiarity, but also impact on the individual and the company, including Tech Start-ups was necessary. However, new technology companies, we assumed, would be more likely to be familiar with vocational programs like MCSE. Thus, Table #2 which breaks down data by company type allows for further examination of the potential for misleading data.

Table #2

Breakdown of affirmative responses for the three different strata of company type.

	Fortune 500	Inc. 500	Tech Start-ups
Are you familiar with MCSE Certification?	59%	87%	70%
Is MCSE an acceptable qualification for work at your firm?	47%	64%	58%
Are people Equally/More Successful, or are they Less Successful?	44%*	70%*	44%*
Does your company provide incentives to become an MCSE?	38%	64%	19%
Are there MCSEs working at your firm?	47%	60%	59%

*Indicates the percent of respondents who feel MCSEs are Equally or More Successful than individuals with a 4-year degree.

Table #2 is an analysis of respondents from each of the 3 strata of companies. We notice, through a closer examination of Table #2, there are some unexpected trends. Fortune 500 companies, as expected, have the least familiarity with the MCSE program. This may be due to several factors. First, Fortune 500 companies tend to be older organizations with specific traditional ideals, and are frankly more resistant to change. Second, it is entirely possible that the bureaucratic and expansive nature of these organizations makes it so even high ranking human resource individuals may not be aware of the extent of their companies hiring practices. In other words the left hand doesn't know what the right is doing.

Surprisingly, the extent to which Inc. 500 companies are not only familiar, but seem to favor the MCSE qualification is staggering. Practically nine of every ten Inc. 500 Human Resources manager is familiar with MCSE, and two thirds find it to be an acceptable qualification. An explanation of the nature of these data may be somewhat less intuitive. Inc. 500, while being more tech heavy than Fortune 500 companies, are interesting because they have elements of both Start-ups and Fortune 500 companies. For the most part, they are newer companies and they have developed and marketed a product or service that has enabled them to produce better than average annual revenues. So, the fact that it is a relatively tech heavy index (64 New Technology companies on 1999s list), with high revenues helps to explain why they not only seek out MCSEs, but also are more likely to provide incentives than either the large Fortune 500s and Tech Start-Ups.

Equally surprising in our findings was the nature of the Tech Start-up companies. They had a relatively high level of familiarity with the MCSE program, but not as high as expected. In fact, with the exception of the provision of incentives that the more established companies have, Tech Start-ups provide the median in each of the other four categories. Therefore, it is justifiable to include Tech Start-up data in our results. Obviously, not being as established as Inc. or Fortune 500 companies makes the possibility for incentive less feasible. However,

intuitively, one would expect that the Tech Start-ups would have demonstrated stronger support and higher levels of familiarity with MCSE than was indicated by these respondents. Nonetheless, because of the potential for skewing the data, the following cross tabulations have, again, been broken down so that the data may be observed with and without protestation.

Table #3:
Perception of the Success of MCSEs for Inc. 500 & Fortune 500 Companies

	Equally or More successful than a 4 year college degree.	Less Successful than a College Degree.
Companies that accept MCSE qualification for work.	92%*	8%
Companies that Do Not accept MCSE qualification for work.	22%	77%

*92% of H.R. representatives who work at companies that accept the MCSE qualification feel that MCSEs are equally or more successful than those individuals who hold a 4 year college degree.

Table #3.1
Perception of the Success of MCSEs for Tech Start-ups, Inc. 500 & Fortune 500 Companies

	Equally or More successful than a 4 year college degree	Less Successful than a College Degree
Companies that accept MCSE qualification for work	87%*	13%
Companies that Do Not accept MCSE qualification for work	17%	83%

*87% of companies that accept MCSE as a qualification for employment with their company find that they are equally or more successful than those with a 4 year college degree.

Conclusion:

By far the most impressive and unexpected finding in our study was the dichotomous relationship between those who have worked with MCSEs and those who have not, as expressed in Table #3 and Table #3.1. Specifically, whether or not we include Tech Start-up companies in our data, nearly 90% of those who have worked with MCSEs believe that they are equally or more successful than individuals with a college degree. Conversely, nearly 80% of those who have not worked with MCSEs believe that they are less successful.

Initially, we thought our research would prove that MCSE training and similar vocational programs provide individuals with success and upward mobility. This study proves that individuals are achieving remarkable levels of success and MCSE training has had a tremendous impact on technology and technology training. The above data demonstrates that people who have worked with MCSEs feel that they are equally or more successful than individuals holding a four year college degree. Moreover, that quite the opposite is true of individuals who have no experience working with MCSEs.

Implications:

Unlike obtaining and analyzing data, understanding the meaning of these findings must be left to conjecture. Some go so far as to indicate the eventual demise of the traditional educational system, concentrating more on teaching a specific skill than on promoting a well rounded general education. Our nation's schools have always judged themselves based on the success rates of its graduates, or on the level that a particular institution's graduates act as contributing members of society. If the trends that our findings indicate persist, and the hiring practices of America's leading employers continue to indicate their preference toward task oriented candidates, the very essence of our educational system may, one day, be quite different. Extremists may even indicate the elimination of the college or university education for most careers in favor of a return to an apprenticeship model of education.

As the American business community, which employs the vast majority of American workers, moves in the direction of demanding job-specific training, so too will the educational institutions. Realizing these trends, public and private high schools have already begun redirecting students into vocational training programs like MCSE. We can conclusively show that Fortune 500, Inc. 500 and Tech-Startup companies express a marked demand for MCSEs. Presumably other vocational programs beyond new technology training will, if they have not already, achieve the exceptional level of notoriety that MCSE has attained. The success and proliferation of these programs will be dictated by demand, and it would seem that a majority of America's leading companies have expressed their desire to employ specialized, task oriented employees.