Personal Productivity in the Information Age

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"You cannot mandate productivity, you must provide the tools to let people become their best."

- Steve Jobs
Co-founder, Apple Computers

Introduction

Being human is not easy in the Information Age. Daily stress and demands placed upon people can contribute to physical and mental illness. Jobs, school, and daily life demand that we be more productive, organized, and efficient. People are spending more of their precious time and energy surfing the web for "info-tainment," checking voice mail and e-mail, and talking on cellular telephones. In the last few decades computer and information technologies have become mainstream in both the home and workplace. According to the NTIA, in 1999 personal computers had a 42.1% penetration into the household. Nowadays, handheld computers, cellular phones and other micro-intelligent devices are on their way to becoming ubiquitous (1999). Some folks are embracing these technologies hoping that they will help them manage their time more efficiently, while others find them obtrusive and ultimately requiring more skill and time to operate. The purpose of this paper is to outline and critique research in the areas of personal productivity and its relationship with information and computer technology. While analyzing available research, I will present my views on the various topics that are introduced.

Defining Productivity

Studying productivity in the information age can be quite difficult. One reason for this difficulty arises when defining the very term, “productivity.” There are a variety of ways to define “productivity” depending on the discipline from which one appeals. From the economists’ perspective, labor productivity can be measured as the amount of output produced per unit of input, and is often taken as a measure of how efficient labor is in the economy. Likewise, an accountant measures productivity in terms of return-on-assets, return-on-equity, or return-on-investment. “These definitions do not fit meetings, e-mail, phone calls, listening to lectures, or gazing out a window while thinking about innovation. Information is something that is intangible and consumed only by people” (Strassmann, 1999c). Where economists and accountants fail in their definitions is that they do not see the value of intangible goods such as intellectual property and ideas.

On a more personal level, there is more to defining and measuring productivity than simply the ratio of units produced to the time spent in production. I feel that the criteria that most people use to define productivity are things like the management of information, quality of decisions, and how we organize and prioritize our lives. The economists’ definition seems to imply quantity, not quality. It is everyone’s goal to maximize productivity levels, which by traditional measures means producing more units faster and more efficiently. Ultimately, productivity is a combination of many factors, which encompass both quality and quantity.

Some experts argue that information technology may completely alter or redefine previous processes, thus making traditional definitions of productivity obsolete and extremely difficult to measure. “Therefore, all productivity must be calculated by comparing the results that can be achieved by innovative strategies and tactics that make superior use of comparable technologies in individual cases” (Strassmann, 1999c). In other words, productivity differs depending on the context in which the term is being used. Often, computerization and IT are wrongly applied to a situation, therefore accelerating chaos and disorder.

Literature Review and Perspectives

A considerable amount of research has been done in the area of business productivity and the ways technology affects workers. This research can in many ways be translated to productivity analysis on a more personal level. Paul Strassmann, CEO of the Software Testing Assurance Corp. in Stamford, Conn. is one of the leading researchers in the field. He is author of over 150 articles on information management and information worker productivity. Strassmann (1998) writes, “It’s a myth that computers have measurably increased overall U.S. productivity of information.” He claims that any gains in productivity that may have occurred are due to automation of factories and warehouses, not from more efficient workers.

Strassmann thoroughly studied the banking industry throughout the 1980s and 1990s. He chose to study the banking industry because IT is the largest cost center in most financial institutions (Strassmann, 1999a). He found that IT was not contributing to worker productivity or producing the estimated results. One

critical fault in Strassmann's studies is that he simply computes numbers. He does not take into account common sense observations like the ones J. Yannis Bakos, columnist for Computerworld points out. Automated teller machines, for example, lower some traditional banking productivity numbers because they result in fewer checks being processed. "However, nobody accounts for the convenience of being able to access your Kalamazoo bank account in Tokyo at 2 a.m. local time," says Bakos (1995). The productivity increase is there. However, it is virtually impossible to measure the exact effects of IT and those of other extraneous forces.

Strassmann also studied other industries and continuously monitors and evaluates the U.S. economy for shifts in productivity. Strassmann says that measuring productivity has been a problem he has struggled with for many years. No matter how he defined productivity, none of the gains or losses in the numbers he has computed has been correlated with IT spending. The lack of correlation between measuring productivity and IT could only be rationalized by assuming a lack of uniformity in the way technology is used (Strassmann, 1999c). For example, he looked at two almost identical insurance firms and compared the IT they employed. One company was losing a tremendous amount of money while the other was showing large dividends. The difference in financial growth was obviously not due to a lack of IT, but possibly due to the way the firm was organized, employees were trained, day-to-day business was handled.

Of his research, Strassmann says, "I asked the question: Does the economy today require more information to do the same thing?" To a large

extent, he finds that today's corporate giants already have all the information they need and computers are costing them more than they're worth. I cannot say that I am in agreement with Strassmann’s viewpoint. These days when utilized in an intelligent manner, networked computing is capable of providing us with extreme power. Endeavors like mapping the human genome and making wireless telecommunications possible at any time or place, are definitely worthwhile.

Not everyone else agrees with Strassmann either. Erik Brynjolfsson, professor of economics at the Massachusetts Institute of Technology's Sloan School of Management comes to another conclusion, partially because he measures productivity differently. He believes that traditional definitions and ways of measuring productivity are out of date because they look at the economy as a whole rather than individual performance. In conjunction with Lorin M. Hitt, associate professor of operations and information management, at the Wharton School at the University of Pennsylvania, Byrnjolfsson studied 600 companies from 1987 to 1994 and found a productivity increase (Hitt & Byrnjolfsson, 1998). In his studies, Brynjolfsson included variables such as improved customer service, which are hard to measure against the bottom line but may impact a company's sales. “The two academics found that the gross return on investment for computer capital averaged 81 percent between 1987 and 1991 for the companies in their sample.”

Investing in state-of-the-art technology is expensive and requires expertise to install, use, and maintain it. Where organizations fail is when they pour money into IT and computer budgets without accurately estimating the associated costs.

To make things worse, many of the organizations also fail to track productivity results (Strassmann, 1999a). In the end, it is practically impossible to determine the benefits, if any, that IT provides. Technology is a never-ending process. Companies experience greater productivity gains when they constantly evolve their automation to meet changing business needs. The organizations that fail to adapt business processes or information technology to a changing competitive environment, in essence, shut themselves off from future productivity gains (Brynjolfsson & Hitt, 1998).

Computers may streamline mundane processes, but they also contribute to communication overload, which minimizes user effectiveness. Researcher Dave DeLong, at Ernst & Young's Center for Business Innovation in Cambridge, Mass., calls this the “unintended side-effect of technology.” There are so many different ways to communicate and exchange information that the scarce resource is no longer information but "getting people's attention" (Hundekari, 1999). Technology vendors are constantly improving and adding new features to their products in order to provoke consumers to buy more. Their quest to increase sales has added to technology overload by making some products so complicated that they are less effective, says Katie Scullion of Kuczmarski and Associates, a management consulting firm in Chicago. “In terms of productivity boosts, the best thing that technology vendors can do is make products easier to use-- providing the kind of user friendliness that a computer users have sought since the early 1980s,” concludes Scullion (Hundekari, 1999).

Rather than speeding up development and work processes, computers and software applications save time in the long run for employees who then ideally use the time saved to improve their production, says Ron Ploof, director of business strategy at IceGroup Inc., a recently formed Internet consultancy firm in Wakefield, Mass. "My experience with companies that adopt technologies," he says, "shows that people take advantage of their personal saved time to put more effort into things that they couldn't do before." Computers may improve productivity through the quality of work. In an increasingly service and knowledge based economy, improvement in product quality, or the level of customer service, can be crucial. In the industrial economy of the past, making more units faster is what counted.

While greater demands on personal productivity have made people more competitive, it may have very well increased the personal pressure faced in getting the job done. Employees that are given the tools necessary to improve their performance and properly educated how to use them will undoubtedly become more organized and beneficial to the organization. Time saved by better organization will lead the clever employees to adopt more efficient means of organizing their personal lives. It may be more costly in the beginning to provide all employees with these tools but in the long run everyone will benefit. As Jeremy Greenwood (1999) states in Economic Review, “the diffusion of new technologies is often slow because the initial incarnations of the underlying ideas are inefficient. Getting new technologies to operate at their full potential may take considerable time, so their productivity may be slow at first.” Any way you look at

it, change does not come cheap or easy, but its overall benefits may pay off in the long run.

Furthermore, I believe that IT is indeed a tool that increases personal productivity levels. Nowadays, it is not uncommon to see people pecking at palm pcs to help organize daily appointments and activities. People are turning to IT to check email, type letters, find information, and manage finances and tasks. Without information technology people who are currently embracing technology may become lost in their daily activities. Some of the ways IT is impacting our personal lives:

- Creating a greater need for technical knowledge and ability
- Allowing more efficient communication
- Accelerating processes
- Producing higher expectations and greater demands
- Allowing us to be more versatile

Conclusion

Personal Productivity is not easy to define or measure. In the past it has been primarily studied in relation to the workplace. Little attention and resources have been dedicated to discovering the effects of Information Technology on the daily routines of average people. This paper has identified and critiqued the most important research that has been conducted in the area of IT and productivity. In addition, I have given my insight on the topics presented. Ultimately, productivity is an important criterion for obtaining a successful business, career and life.

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