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The Use and Misuse of Technology (Q&A 10/24/95)

By Bill Gates

Q. How long do you think we will continue to misuse technology by having it replace tasks that humans perform? The fundamental needs of society are rapidly being met, and at some point soon there will be many workers with nothing to do or not enough for companies to pay them a living wage. (Dennis Hollarn II, Erie, Pennsylvania, dhollarn@advacom.com)

A. Over the past two centuries the standard of living has risen dramatically because human productivity has increased. Progress has been driven by various forms of technology, including mechanization and advances in areas such as medicine and software. Many jobs have been replaced with new ones. Today there are fewer blacksmiths and more auto mechanics, fewer telephone operators and more telemarketers. People who might be toiling in fields had they been working in 1795 use their minds to earn a living in 1995.

Technology will continue to improve human productivity. Those societies and people who find better ways of working will thrive—compelling others to catch up.

This trend toward using less human labor to accomplish more shouldn't alarm us. It should please us. It means that fewer and fewer jobs involve drudgery. I don't believe the number of jobs in society will decline or that work will get less interesting as machines take over certain tasks. History and economics teach us that if a job is lost because of better productivity, the person who held that job is freed to help meet some other need. Until we have infinitely good education, infinitely good service everywhere and beautiful inner cities, there are jobs left to be done.

The day that most important needs are met, society will shorten the work week and increase vacation time. As the world gets richer, some of its wealth will go to increasing relaxation time. We must not lose sight of the fact that there will be dislocations for many individuals. The nature of work has been changing for generations, with people scrambling to adapt. The young tend to be better at this, because they don't have as large an investment in the established way of doing things. Government can soften the impact of dislocation. Because most change takes place across multiple generations, it may even be possible for government action to buffer whole generations of workers until they retire. The extent to which governments should do this is a political question. But governments cannot affect the eventual outcome. The market mechanism ultimately is in control.

Q. How many hours do you sleep? I read a book that said you used to sleep only one or two hours. Do you still wake up in the middle of the night with an idea? (SHJOHNNY@aol.com)

A. When I was working on BASIC for the first personal computer 20 years ago, I slept only a few hours a night. I was younger. Now I sleep six hours a night. I often wake up with ideas.

Q. What do you think about Netscape and its rapid growth? <joeb@connexus.apana.org.au>

A. Netscape is a very fine company in an exciting area. It is the kind of company Microsoft will cooperate with in some areas and compete with in others. A lot of good companies, such as Apple and IBM, fall into that category. People sometimes draw comparisons between the Netscape of today and the Microsoft of 20 years ago. I see some parallels, but only limited ones. Both are software companies that rode the early currents of what eventually became tidal waves of change—personal computing in the case of Microsoft, and the Internet in the case of Netscape. A key difference is that two decades ago personal computing was all but ignored by the established players in the computer industry, whereas today the opportunities presented by the Internet, and interactive networks in general, are on many minds. Microsoft was very fortunate in that it didn't face the kind of sustained, determined competition from entrenched competitors that Netscape will. If you look at the history of technology, the big mistakes large companies made primarily involved a lack of focus. IBM didn't focus on software. DEC didn't believe in the personal computer. This made room for new companies such as Microsoft.

Today Microsoft has become one of the entrenched competitors, and we're mindful of lessons from the past. We're not ignoring the Internet. On the contrary, I estimate that 80 percent of what we now

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do focuses on the Internet. We view it as a remarkable opportunity, and we thrive on spirited competition from good companies such as Netscape. We have hundreds of employees who get up every morning with just one thing on their minds: finding ways to improve the Internet, thereby winning for Microsoft a larger share of the market for Internet browsers. (An Internet browser is software that lets an individual roam the worlds of information available on the Internet. Microsoft's browser is called the Internet Explorer.)

People ask, "Will the Internet be the thing that kills you?" I say, with tongue in cheek, "No. It's all the other things that will kill us, because we're so distracted by the Internet."

One challenge Microsoft did face, and that Netscape now faces, is coping with a high market valuation. Netscape has little income, but investors have valued its stock at more than $2 billion. When a company's shares have a high value, expectations from investors, including employee-owners, are correspondingly high. Failure to meet those expectations can be damaging. If you're giving share options to employees so that they can participate financially in the expected success of a company, a high valuation hurts. If the market's already anticipated the great work those people are going to do, then their stock options won't appreciate much in value, if at all. This can make the options worthless. Many times in the past I have felt that Microsoft stock was higher in value than it should be. Subsequently I was proven, in a sense, to be wrong. Controlling expectations—whether about deliveries, product features or stock value—is often wise in a technology business. It's a lot better to under-promise and over-deliver.

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