TOO MANY U.S. MANAGERS ARE TECHNOLOGICALLY ILLITERATE

Yoshi Tsurumi[1]

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Whenever I start teaching a new class of business school students, I give them a little math test to get some idea about their technical skills. Typically I ask them to find the value of x and y in a couple of quadratic equations or to draw a graph of the function of one of these equations on the xy plane.

These are not usually difficult problems as math goes. Over 90% of 10th-grade Japanese students can do the first one, and about 85% can handle the second. One would expect future American business leaders could perform these calculations with ease, since quadratic equations have to do with the fundamentals of minimizing and maximizing values — which, after all, is what business is all about.

But my American students (at universities such as Harvard, Columbia, and UCLA) do not handle these problems with ease. Only about one-third usually can find the values of x and y, and very few can graph these values. Not only that, they complain bitterly about having to do these problems. They tell me they don't see the relevance of them to business.

This points up what I believe is one of the most serious problems facing American business: the technical illiteracy of its managers and executives. Few of them have the skills to solve real-world problems. Business decisions require weighing variables (x and y) such as sales and costs, product quality and productivity, price and market share, profits and taxes. But business managers aren't well equipped to reason and think in those terms.

I have compared the top three executives of 24 leading Japanese manufacturers with the top three executives of 20 leading American competitors in such fields as semiconductors, computers, consumer electronics, steel, autos, chemicals, pharmaceuticals, industrial equipment, and processed food. The differences were dramatic. Two-thirds of the Japanese executives had science or engineering degrees, compared with only one-third of the American ones. Furthermore, none of the Japanese executives without technical training rose through their legal or financial ranks. But over two-thirds of the American executives reached the top through careers as corporate lawyers, accountants, and financial officers.

Also, the Japanese executives with nontechnical backgrounds were heavily schooled in domestic and international sales operations, while the American executives with nontechnical backgrounds have mostly risen through advertising careers and corporate planning. This is typical of the career track of the new breed of American manager with an MBA degree. The whole preparation of American executives tends to make them aloof from the factory floor and from the human beings who are involved in the day-to-day task of making products.

This process begins early. People who make it to the top of Japanese industry usually have spent several years sweeping their own classrooms and cleaning their school toilets. In elite U.S. schools, of course, there are "custodial personnel" to do that dirty work.

If many young Americans entering leading graduate schools are already technically illiterate, three or four semesters of business school are likely to increase their disdain for getting their hands dirty in classrooms and factories. Once they join a company, opportunities for experience at the ground-floor level are limited. The result is that the people running U.S. companies lack familiarity with the organizations they are guiding. Is it any wonder that they are drawn to legal or financial solutions rather than technical or human ones?

The Japanese chief executives I surveyed spent, on the average, 21 years in the same company before they were promoted to the lowest rank of corporate officer, and an additional 11 years in the same firm before they reached the rank of chief executive officer. With a few exceptions, they joined their firm right after graduation. Their American counterparts typically had gone through three or four job changes and had spent an average of only nine years before becoming a corporate officer. Subsequently it took them only four or five years to become chief executive. In the United States 15% had been brought in from outside to become chief executive.

This isn't the pattern in all American firms. Among my corporate samples were IBM, Procter & Gamble, DuPont, and Texas Instruments. Their chief executives' career profiles are similar to those of their Japanese counterparts. These American firms appear to demand that chief executives be thoroughly familiar with their people, products, and markets. It is no accident, then, that these firms have conceded nothing to their Japanese competitors.

A typical Japanese business graduate who joins a company will spend six months to a year at a factory, followed by a series of assignments that help him to get to know factory workers, engineers, and managers. He is introduced to a corporate culture that encourages its employees to try out

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new things, learn from mistakes, and share information. He might even be sent out to work in a store where his company's products are sold, to see how the products are accepted by customers.

Compare that with the experience of many American MBAs who are told to show "results" within nine months or a year. They are not supposed to make mistakes. They hide precious information from other people. They are forbidden to make contacts with the people in other departments without going through proper channels. These whiz kids rush to reorganize the workplace, shave the cost of maintaining machinery or developing new products, concoct creative accounting schemes, and fire "low achievers." Chances are they won't be around when their splashy gestures prove to be disastrous. They will have moved on to assume more lucrative, higher-ranked jobs elsewhere.

Too many American MBAs are taught to treat ordinary employees as disposable "direct labor cost." They are taught to swallow uncritically the myth that corporations exist only to reward abstract stockholders, that capital budgeting and financial controls are the most effective management tools. One result of the U.S. system is executives such as David Roderick, chairman of U.S. Steel. Roderick, an accountant by training, spent much of the $1 billion that the U.S. Congress made available through various tax cuts to purchase Mobil Oil — instead of modernizing steel facilities and keeping steel workers employed.

The irony of all this is that the Japanese system is modeled after an American system that no longer exists. After the war, Japanese industry put a premium on practical knowledge and hands-on experience. We looked to American teachers who taught that "high purpose, courage, honor, and independence" were leadership qualities crucial to a company's success.

You won't hear such things discussed in the best business schools today. Instead, we have a business culture that applauds executives who help themselves to big bonuses and raid other companies while sending loyal workers to the unemployment lines.

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