By Lewis H. Young

To revive research and development

Last month in *The New York Times*, Reginald H. Jones wrote an article* lamenting the neglect of science and technology in the U. S. and linking this shortcoming to the causes of inflation, unemployment, declining productivity, trade deficits, disenchantment with government, and loss of international position. In proposing a remedy, the chairman and chief executive officer of General Electric Co. suggested three incentives:

- Flexible depreciation for equipment and special-purpose structures used in research and development.
- Flexible depreciation for purchased patents and other intangible items of technology, such as knowhow and secret processes.
- A special deduction equal to 120% of research-and-development expenditures.

Few members of the Business Roundtable, the organization of chief executives of large U. S. corporations, would argue with Jones's prescription. But the fact is his remedy omits one serious cause of the lack of investment in R&D in the U. S. today—the unwillingness of so many of today's financially oriented professional managers to take the risks such investments involve. Moreover, the incentives Jones proposes are aimed at the wrong segment of business: big business, which doesn't do all that much innovating.

Why R&D lags. During the past decade, the concentration of the chief executive officer of most big corporations on financial matters has kept him focused almost exclusively on the short run—on next quarter's earnings or this year's profits. Jones's proposal reflects this. Despite lip service—and quite a bit of it, too—to the subjects of long-range planning and strategic planning, most companies are run by bottom-line management, which means the chief executive comes up with a profit number for the year and then makes sure it is achieved. If the company falls short of the mark, such areas as R&D, new-product planning, or marketing are slashed, because cuts in those areas show up on the bottom line quickly.

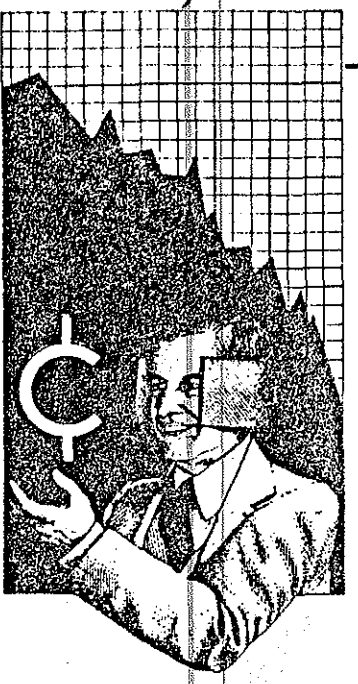
Using the excuse of applying the techniques of professional management, a lot of chief executives have turned timid in the area of product and process innovation. Approving an innovative R&D program is costly, not only in money, but in reputation if it turns sour. And the risks of a long-term project not working out are high, too high for managers who can see a sure fast profit squeezing another ⅛% out of the corporate cash, or using the corporate cash to buy a going business. Kennecott Copper Corp., for example, will not undertake any R&D effort that does not promise a payback within five years. RCA Corp., once a pioneer in high technology, has now opted for surer but smaller returns by acquiring a financial services company (CIT Inc.) instead of gambling on a big future with videodiscs. In addition, RCA stopped designing and manufacturing its own videotape recorder, with the risks that involves, to sell Matsushita's product.

Because of U. S. companies' unwillingness to take a gamble on R&D, many Japanese executives say they no longer fear American competition. Japanese companies often trade short-term profits for long-term growth. That kind of persistence has enabled the Japanese to make big inroads in steel, autos, consumer electronics, and now computers. And the Japanese have persevered even though, as in 1965 in color television, they suffered from a lack of competitiveness because they didn't have the production volume to match U. S. companies.

The failure to invest, particularly in process R&D and new manufacturing equipment, tends to have a multiplying effect. Rockwell International Corp. found that its newly acquired Admiral Group Div. could not compete in price with Japanese television manufacturers because the Admiral plant was full of outdated mechanical manufacturing and testing equipment, while the plants of its Japanese competitors were equipped with the latest instrumentation, automatic assembly, and materials-handling gear, and Rockwell was not prepared to spend to modernize the plant—even though it believed it had a superior product. Nor was the company willing to wait the years it would take to establish its superior product as a high-quality, premium-priced television set. Its answer: Go out of the television business.

Vested interests. Jones's own GE has not achieved a lot of success in one aspect of high technology. It could not make it in the semiconductor business or as a supplier of mainframe computers, and it was slow to respond to the microprocessor revolution. These are areas that require fast decision-making, flexibility, and risk-taking. In big companies, there is a bureaucracy designed to accomplish the opposite. It slows down innovation to the point that the bright people who are best at this kind of work leave or give up in frustration. And too often bureaucracies in companies have vested interests in the products or the old way of doing things and are imaginative only in devising reasons why new-product or new-process work should be killed. It is far easier to shoot a new idea full of holes than it is to come up with the innovation in the first place.

A more effective solution to the problem of declining U. S. innovation would be to change the tax laws to encourage the person with a good idea to start a new small company. As these infant enterprises grow, they would contribute far more to employment, to fighting inflation, to boosting productivity and to maintaining the U. S. competitive position than an increase in depreciation rates at large corporations will. What is needed is to modify the tax laws so that people who are willing to start or invest in new enterprises can make money and keep most of what they make. ■



People with new ideas must be given an incentive to start companies to produce and market new products. Big business is too much the prisoner of the bottom line

*Adapted from the Calhoun Memorial Lecture delivered at Washington University on Mar. 27, 1979. In the lecture, Jones also recommended several other tax reductions.

Drawing by Ron Chironna