Wanted : new science policy

In the United States, as in the rest of the developed world, the twin-headed international monster of simultaneous inflation and recession has, by threatening an era of no growth, loosened the financial adhesive that has until now made technology and progress virtually synonymous. It may be time for innovation itself to take a new form. Wil Lepkowski reports.

FOUR years ago, as President Nixon was preparing schemes for waging his re-election, one of his aides took the notion that "technology" might be a viable campaign tool for harnessing what was left of a sympathetic technical community. Out of the woodwork flew William M. Magruder (no relation to Watergate's Jeb S. Magruder), who until then had been the government's supersonic transport lobbyist. History records that Magruder, aeronautical engineer and former test pilot, failed in his attempt to sell Congress on the merits of supersonic passenger flight. But Nixon gave him a second chance. He appointed him to assemble a "New Technological Opportunities Programme".

That failed, too. Nixon's own Office of Management and Budget allowed Magruder to huff and puff in a vast interagency search for the finest, economically most relevant set of programmes. But it saw that the best ideas were already being funded and the "new opportunities" were simply unfunded dreams taken from dusty file cabinets. Nixon subsequently unfurled a platitudinous science and technology message in March 1972 (less than a year before he wiped out the White House science advisory apparatus). Magruder was given a large office to

rethink his goals, and the myth that crewcut, phallic technology was the answer to America's challenge of the 1970s sputtered to an end.

The economics of America weren't good then, and heaven knows they are much worse now. Yet curiously, Nixon's successor, Gerald Ford, wheels out no latter day Magruder. William M.'s perceptions, like Jeb S.'s ethical compass, were off by something like 135° in a value system that continued to stress large scale, power hungry, complex systems at the expense of the sophisticated but smaller scale technologies that seem needed today. The curiosity is that Ford, who, in a man by the name of William Goldwin has an intellectual advisor to flag him on critical future issues, hasn't uttered the slightest hint that maybe a new look at technological innovation and the scientific base needed to sustain it might be part of the way to solve the country's potentially disastrous outlook.

Technical Washington is tired, dejected, and cynical—a virtual burnt-out case. "There seems to be a malaise that has set in," says a National Academy of Sciences staff member, "and it has deepened. Members of the committees I work with seem to feel that nothing they do matters".

Big technology, however, does churn

forward, chiefly in the form of energy projects under the Energy Research and Development Administration. And in the field of health services, technological impersonalisation in the name of productivity holds policy sway, in spite of the Department of Health, Education, and Welfare's new dedication to prevention as the programme perspective for the next 10 years. In both fields, central to national welfare, costs and consumer dissatisfaction soar. One Washington source observes that present leaders continue to wear the same perceptual filters that brought the country to its present burnt-out state. He says we need a new set.

The new set could come in the form of a thoroughly new look at innovation for an era of no growth. Merely beginning the exercise would be monumental in itself, for the assumption is that economic growth must resume if any innovation can happen. More to the economic point, conventional wisdom has it that the economy simply must grow if American industry is to raise the capital to build the machines to provide the jobs to prevent social unrest. Industry needs around \$4.5 million million in new capital by 1985 to do little more than stay even. Few of the best banking heads know where even half that will come from.

There is trouble ahead, and if there was ever a time for the generation of new ideas it is now. The maddening fact, however, is the almost complete lack of debate over technological and scientific innovation. Almost . . . for there is a twinkle.

The twinkle is Princeton University economist Robert Gilpin, who has produced a report for the economic growth subcommittee of the joint economic committee. Gilpin's report lacks the substance that could come from discussing 'things' in the form of the ideas and inventions that offer a way out of the mess. But he gives broad policy hints that say we should at least be nimble.

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“The manner in which we manage the so-called energy crisis will be very instructive with respect to our capacity to rejuvenate our economy in an intelligent way,” he says. “On the one hand, the resource, environmental, and related problems affecting our economy may very well be the functional equivalent of catastrophe. They can and could force the long-term rebuilding of our technological-industrial infrastructure. New demands and needs have

been created which, with proper incentives, could lead to the innovation of new industries and technologies which in turn will generate new technology-intensive exports.

"On the other hand, in our anxiety to find a quick and short term solution to our energy and related problems we could, through government subsidisation of large and commercially inefficient technologies, harm our economy. In pursuit of energy independence and security of supply, we may lock our economy into a high, non-competitive price of energy." He might also have added health and welfare costs.

Gilpin calls for more planning of America's future. But his caution is that economic planning in the past has been justified usually in terms of protecting rather than rejuvenating industry. What seems to be needed is

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a thorough examination of the scientific enterprise and the ways its own mode of operation is governed by out-moded economic and industrial priorities.

The point is that the issue of innovation during a time of sweeping economic change—and the anxiety that accompanies it—is crucial and necessary, but tricky. It calls for breaking through to new perceptions without falling into the traps of faddism and technological cynicism.

All over the country, small groups of scientists, technologists, artists, children and plain people are forming communities built on small scale self-sufficiency technology. To them, this is innovation. And having given up on their government, they are going their own way with the old string and sealing wax approach. Except they understand optics and electronics and mechanical inventions as well. Strangely, neither Ford nor the Energy Research and Development Administration, nor the Department of Housing and Urban Development, nor the Office of Technology Assessment in Congress are doing anything to tap this potential rescue army.

Meanwhile, its troops buzz away constructing their beehives according to the laws governing the economics of nature. Others are designing new health maintenance systems built on the premise that the body tends to heal itself and can be promoted to do so without heavy resort to medications. And no one up high notices them for the innovations they could represent. The

worst offender is none other than the National Science Foundation, whose mission is to search out and fertilise the innovator.

All of this is understandable, however. The 'new innovators' aren't always the most patient thinkers, and many are outright anarchists. One is Karl Hess, Barry Goldwater's former speechwriter, who in one motion evolved from conservative to radical in his politics, now refuses to pay any income tax—claiming to own nothing—and is working on a neighbourhood self-sufficiency project in a Washington ghetto. Still, Hess and hundreds of other such community leaders may have something if neighbourhoods in the middle class suddenly find their natural gas supply at an end and jobs not available.

Perhaps one of the problems is that Ford and his advisers refuse to consider the worst of all possible futures (such as the collapse of the central banks) when technology for self-sufficiency would be the policy.

A policy for the worst possible future would create the lean and elegant technologies that just could turn the society back to a sense of benignity and small scale. There are some harsh economics truths in the air at present that indicate the advisability of a 'new science policy'. The financial markets are in virtual turmoil, owing to the barely averted collapse of New York City and, with it, New York State. The ripple effect through the entire socio-economic structure of the country is too vast to contemplate if the country cannot pay its bills to itself. Everything stops, except the 'life urge' itself—and that is the ultimate of any economic or science policy; human needs. There is no fooling around about such matters. But, curiously, leaders are ignoring them. □

Ford: should he consider a technology for self-sufficiency?