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Technological Initiatives and Political Realities

Harvey Brooks and others have commented on the mismatch of the time constants of technology and politics. A substantial innovation usually requires 8 to 10 years to reach fruition. Politics has a large emotional content whose thrust changes rapidly and unpredictably. In the course of a decade we experience scores of major or minor political tempests.

Because of the performance record of science and technology, politicians are inclined to call on them when political problems emerge. Often, though, before substantive efforts can be made, the political climate has changed and a program that was a political asset has become a liability.

The vagaries of the interaction of politics with technology are illustrated by a series of events that began in 1971 and are still in process. In 1971, several factors combined to create a climate in which it seemed politically desirable for the government to foster new technological initiatives. A deteriorating balance of payment carried with it the implication that our technological supremacy had slipped. Widespread and publicized reports told of unemployment among scientists and engineers. There was a general feeling that some of the technological expertise that put men on the moon should be devoted to solving urgent domestic problems. The economy was in a slump, and means for stimulating it were being sought.

Task forces were formed, and suddenly Washington Watchers were aware of the name of Magruder (*Science*, 22 October 1971). There was great moving in and out of Washington of distinguished scientists and engineers and talk of programs costing billions of dollars. In November and December 1971, excitement reached a peak and we were told that big things would be announced early in the following year.

Somehow the promised events did not quite come off. The fiscal year 1973 budget request and a subsequent special Presidential Message on Science and Technology contained references to technological initiatives, but the presidential requests did not match the rumors. It is not easy to delineate the programs that resulted from the 1971 excitement. One new budgetary request that was enacted was a \$44 million Experimental Technology Incentives Program. Under this program, the National Science Foundation (NSF) and the National Bureau of Standards (NBS) were authorized to develop experimental contract programs to study means by which the federal government could best stimulate research and development. In the words of Lewis Branscomb, this was to be an "opportunity to evolve and demonstrate an economically effective and politically acceptable relationship between federally sponsored R & D and commercial business." It is possible that this program was not the best way to spend federal funds in behalf of R & D. However, the matter will probably not be brought to a full test, for 1973 has brought new political realities. The economy is more robust. Talk of unemployment of scientists and engineers has abated. The President has won reelection. The big push in Washington now is to hold federal expenditures to \$250 billion this fiscal year. Congress appropriated about \$260 billion, of which about \$175 billion is nondiscretionary—for example, interest on the debt. Thus if \$10 billion is to be cut, it must come from the \$85 billion in which are included the expenditures of NSF, NBS, and other science-oriented agencies. In consequence, funds earmarked for the Experimental Technology Incentives Program have been withheld by the Office of Management and Budget (an arm of the President). The whole affair reminds me of a rhyme I heard as a boy. The King of France and twice ten thousand men marched up the hill and then marched back again.

—PHILIP H. ABELSON