

ments for fiscal years 1964 and 1965 highlighted the planning function. For fiscal year 1965, OST said it was "spearheading an effort to rationalize long-range planning of Federal research and development." OST said it was working closely with the Bureau of the Budget and the planning staff of the National Science Foundation, but did not mention the Federal Council's Committee on Long-Range Planning. OST's expectations indicated an optimistic outlook for long-range planning in 1964:

We expect to identify more clearly the aggregate requirements for Federal funds and for skilled manpower; to determine future commitments to support major research and development facilities; to visualize the implications of concentration or diffusion of effort between scientific fields and between institutions, where the impact of support from a number of separate agencies may be quite different from that determined on an agency-by-agency basis. Such long-range planning should also make it possible to identify unwitting duplication in the planning of new research facilities and to illuminate gaps in programs which inadvertently occur when one agency is of the belief that another has assumed program responsibility.⁶

But by 1966 Dr. Hornig apparently had changed his views. In testimony early in 1966 to the Research and Technical Programs Subcommittee of the House Government Operations Committee, he said:

I do not believe that any single mechanism within the Executive Office of the President, for example, or even within the office of the head of each department and agency, could be relied upon to blueprint the nature of research and development to satisfy our needs.⁷

In answer to a question, he elaborated further, saying:

I do not think a single planning mechanism—I have watched attempts—is capable of introducing enough ideas to make the system good. I do not believe the blueprinting process from the top is the best method.

What we try to do, therefore, is collect and put together ideas from outside the Government and from within the Government and develop programs. That I think is a proper central function.⁸

Question: 5. What past or present studies sponsored by the Federal Government are providing information about factors that determine the "critical size" for a given laboratory? Are any future studies planned?

Answer: There have been no formal studies of what constitutes a "critical size" for a Federal laboratory. The critical size would vary widely depending on the purpose and function of the individual laboratory concerned. The Defense Science Board, for example, has judged that 1,000 or more professional scientists and engineers would constitute a critical mass in a "weapon-center" laboratory; one can visualize other situations where a number smaller than 10 might be sufficient. This is properly a matter for judgment by the technical managers of each agency. Studies and discussion of what constitutes a "critical size" under varying circumstances might be helpful, but no specific studies are planned by OST at present.

Question: 6(a). What has been done to implement the Bell Report recommendation that "arrangements should be made to call on Government laboratory and development center personnel to a larger extent for technical advice and participation in broad program and management decisions—in contrast to the predominant use of outside advisors."

Answer: I agree wholeheartedly that Government laboratory personnel should be called upon for advice and should participate in broad program and management decisions. At the same time, of course, there remains a strong need to provide continuously to the system the breadth, freshness of viewpoint and independence which is obtained only from outside advisers.

A number of agencies have taken steps since publication of the Bell report to increase participation in management decisions by their laboratory directors. I would refer you, for example, to the testimony by the Defense Department, which discussed the establishment in the Armed Services of new overall management positions responsible for the effective management of the laboratories, and of the improvements in communication with the laboratories this is helping to provide. Groups of laboratory directors meet regularly with these top technical managers to discuss requirements and capabilities, and to exchange views with

⁶ "Independent Offices Appropriations for Fiscal Year 1965." Hearings before a subcommittee of the House Committee on Appropriations, 88th Cong., 2d sess., 1964, p. 903.

⁷ "The Federal Research and Development Programs: The Decisionmaking Process," op. cit., p. 8.

⁸ Ibid., p. 9.