

APPENDIX III

SOVIET ANSWER TO THE QUESTION: What must be done to ensure that the achievements of science are put to work in the economy without delay and on a broad scale?

First: What must be the relationship between the development of fundamental research and the practical application of science? What are the optimal proportions in which to finance them?

We find it works out that roughly 70 per cent of our resources go on the development of fundamental research, which determines the development of science itself, and 30 per cent are set aside for applied research. But the economic benefit derived from the application of scientific work repays for the most part for the Siberian branch's development of fundamental scientific research. Since our foundation we have introduced over 700 scientific discoveries into production. In 1974 alone our institutes were carrying out research on 610 important subjects and 230 new advances were handed over for industrial use, each capable of saving at least one million rubles.

Second: We are trying not simply to introduce a new process, but see that it is made available to all enterprises in the relevant branch of the economy and indeed to all who are interested in it. This is not a simple job. It demands a high level of organisation and serious cooperation with industry. We are working out this system of cooperation in order to influence whole branches of the economy. This system includes coordinated programs for mutual work with the Ministries, ties with large scientific research institutes and cooperation with leading enterprises.

Third: founding and developing experimental bases. Before the new scientific ideas can be introduced into industry they must be developed to an acceptable level; the ideas must be "given substance," so to speak. At Akademgorodok we have our own experimental factory. The town is surrounded by a rapidly growing network of research institutes and design bureaus. Here the scientists' ideas are put to work and given technological embodiment, and this shortens the time required to introduce them into the economy at large.

Four: internal cooperation in research. This is something that is necessary for the development of science itself. Admittedly the most interesting discoveries are made on the boundaries between different scientific disciplines. Internal cooperation is also essential if research is to have effective impact on the economy. Let me quote a few examples of what I mean: explosion welding; hydro-impulse activation of mechanisms; the automatic control systems; research into the geology of oil and gas, which enables new sources to be uncovered;

original catalyst reactors and mathematical models of them; work in the field of genetics; research aimed at fighting virus diseases; and breeding purely siberian strains of wheat -- all this is felt to be really worthwhile, both by the producers in this country and by scientists throughout the world. And it has all resulted from cooperation between different scientific trends within the Siberian branch.

Five: the further comprehensive development of large "mechanisms" like the siberian branch. It is necessary to raise the scientific potential and consolidate the scientific foundations of all new centres of Siberian science. Siberia needs large teams of scientists, who are capable of working out, introducing and developing new technological and other processes based on advanced automation. As well as organising such teams we go a long way towards training the scientists for them. These are specialists of a new type, closely linked both with science and production. It is these comprehensive links, both in Siberia's science and economy, and between them, that guarantee our successes for the morrow.

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