



How INDUSTRY can Improve the Usefulness of ACADEMIC RESEARCH

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ACADEMIC RESEARCH HAS been very useful in industry. What readily comes to mind are the thermodynamic data for ammonia synthesis by Dodge, high pressure technology of Comings, fluidized bed fundamentals by Lewis and Gilliland, drying by Sherwood, and reactor design by Wilhelm. The works of Wilhelm were particularly influential in my efforts as an industrial researcher, as his research interests were guided by long term consulting associations with Mobil Oil and Merck. Judging from recent complaints, we can conclude that the expansion of academic research of the last 15 years were not matched with a proportional increase in user satisfaction in industry.

What is the cause of this change? Part of the answer lies in the increasing trend of industrial funding and direction of academic research by proxy — paying corporate tax to the federal government, and letting it decide what research should be performed. According to National Science Foundation figures, federal funding of academic basic research was six times greater than industrial funding in 1953, and this ratio has grown to thirty times by 1970. This shift has pushed us much closer to the Soviet Union model, where all scientific research funding comes from a central source which is an all-seeing bureaucracy, where industries address their pressing problems to academics only through this intermediary bureaucracy. I have seen institutes of catalysis doing the purest research, with more than a hundred workers,

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CEE continues to bring educationally oriented AIChE matters to our readers. The following two papers are based on remarks made at a symposium chaired by Prof. Bankoff at the Cincinnati meeting. They follow his paper on the "Relevance of Academic Research" in our Spring 1971 issue.



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larger than any in the Western world; and yet when the Russians need a new catalytic process, they have to buy the technology from abroad.

WE HEAR DAILY CLAMORS that academics must respond to society's needs. I would submit that academics can only respond to society's demands, and demand = need + cash. He who pays the piper calls the tune. It is true that basic, long-range, non-proprietary research in the national interest should be funded by the federal government; while short-range, proprietary research should be performed by an in-house industrial research laboratory; but research of benefit to an industry is best sponsored and directed jointly and singly by industry and performed in academic institutions. If industries would like to see more useful academic research, they need to cultivate the professors by informing them where the interesting problems are, and perhaps the best mechanism for this is a long term consulting agreement. Businessmen do understand that you only get what you pay for, and funding of academic research only costs 50 cents on the dollar, by savings on federal corporate income tax.