SBA's innovation program - failure rate? AT - DOE Energy Loans

The Failure to Support the Initial Funding of Prototypes of New High-Technology Products and Services.

In 1842, after literally sitting on the steps of the Capitol for five years, Congress granted Samuel B. Morse $30,000 to test the feasibility of bringing his concepts on telegraphy into practical application. The grant gave almost total freedom in the use of funds and imposed no conditions that would impede commercial application of the results. Mr. Morse chose to use the funds to build a test telegraph line between Baltimore and Washington. This telegraph line served as the prototype and incentive for the investment of capital to construct a nationwide network of lines under patent licenses from the inventor.

While no one would deny the blessings bestowed on the Nation through the modest assistance afforded to Samuel B. Morse to implement his ideas, the country has done little in the intervening 140 years to devise programs to provide similar grants of seed capital to individual inventors and small businesses to test the initial feasibility of advanced, but risky technology. This is especially disturbing in light of the studies devoted to establishing that innovative small businesses are a primary factor in introducing new high-technology industry and all its benefits, to the country .

While it is true that only a small part of seed capital for advanced technology goes to small business entrepreneurs from the government in the form of grants, or direct loans, it appears that a great deal of funding could be available to possible high-technology start-ups through government guaranteed loans and government-supported Small Business Investment Companies (SBIC) programs. Unfortunately, the evidence indicates that most of the funds in the guaranteed loan and SBIC programs flow to prosaic small businesses with limited growth potential or to expansion of existing businesses. These programs fund some small businesses to introduce new products or processes after feasibility has been determined, but little, if any, is made for the purpose of establishing feasbility. This policy is pursued at the expense of possible new higher job producing, but riskier high-technology ventures.

This may be the result of the unavailability of a wide array of technical evaluators capable of separating the "wheat from the chaff" in advanced technology ventures. It seems that even private sources of capital (whether bolstered with Federal guarantees and loans, or not) are unwilling or unable to assume the funding necessary to demonstrate the feasibility of many high-technology concepts because they cannot be determined to be "reasonable risks." (It is important to note that before an SBA Section 7(a) loan can be made, whether direct or guaranteed, it must be determined that the borrower's venture is a "reasonable risk").

The limits of private sector lending should not be surprising since even in the case of the telegraph, private funding was unavailable to Samuel B. Morse until the feasibility of his concept was demonstrated at public expense. It can be concluded from this that the government will need to assume the posture of sponsor of last resort in proving the initial feasibility of many new advanced concepts if this country is to remain competitive in introducing new technology. The current perceived slump in innovation indicates that remaining at the cutting edge of the World's new products and services requires more than what is now being contributed by the Government.

Review of direct loans by the government as a possible solution also reveals problems as a mechanism to fund new but risky advanced technology concepts. Federal loan officers are known to have no incentive to undertake the responsibility of funding a high risk study as they are not trained to do so, nor would a successful result in any way enure to their benefit.

Thus, (1) the inherent limitations of the direct loan, guaranteed loan, and SBIC programs in providing seed capital to test initial feasibility of advanced, but risky technology, (2) the assumption that the government may need to be sponsor of last resort and (3) the perceived slump in U.S. innovation, leads to the urgent need to identify programs that can be responsive.

In our opinion, the best possible solution to our need lies in restructuring the government's $5 billion R&D grant program. Most government grant programs as they exist now would either, not be able to fund Samuel B. Morse because they prohibit grants to individuals or profitmakers or, if able, would not attract his participation due the onerous conditions attached to the grant. However, grant programs have existed in past years that have sucessfully contributed to the initial steps of introducing advanced technology to the marketplace.

In the 1950's and 60's, the Office of Naval Research (ONR) was able to run a grant program that many now believe to have been an example of successful direct funding of R&D by a Federal agency. In short, the factor's that seem to have lead to this perception were at least:

1. An authority to entertain unsolicited proposals in a broad spectrum of scientific disciplines. (In the 1950's and 60', ONR was virtually the lone agency supporting basic research in the government.

2. An authority to conduct not only basic, but applied research through the grant program.

3. A minimum of bureaucratic constraints including the authority to give grants to profitmakers and individuals.

4. A thorough and effective scientific review process and;

5. A policy of leaving invention rights with grantees.

The success of the program can be measured at least by its contribution to the introduction of atomic time standards, metallurgy of titanium and molybdenum, long-term freeze preservation of blood, the lithium battery, computer-aided instruction, sonar, etc.

While it is correct that the government could fund the initial feasibility testing of an individual's or small business's invention through contract, in practice this rarely occurs. Government contract programs, in most part are utilized to purchase research and development services to implement new processes and products deemed necessary by government management. Because these new processes and products are generally intended to meet the perceived needs of government and not the general public, few contracts on unsolicited proprietary proposals from individuals and small businesses are awarded. Further, such unsolicited proposals are discouraged by a strong bias in the government toward advertised procurements and the amount of paperwork required of both the government and submitter before a proprietary proposal can be funded.

All of these problems vanish, in the setting of a properly structured grant mechanism as suggested by ONR. Because the benefits that can flow from the assistance provided by such a program are so identifibly necessary if we are to remain competitive, the Office of Advocacy is pursuing every course available to open government R&D grant programs to individual