INFORMATION TRANSFER BETWEEN AN ACADEMIC RESEARCH CENTER AND ITS MEMBER FIRMS

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Many American universities have recently established research centers that interact with industrial firms. Such centers have been supported by the federal government whose objective is to enhance technological innovation. For this study, interviews were conducted with liaison persons from the member firms to determine how the firms acquire and use information obtained from the center and why they maintain a relationship with the center. The findings confirm that the center is a useful source of information for the member firms. It clarifies the need for establishing strategies that facilitate the transfer of information without compromising either the center or its members.

A major goal of developing closer links between universities and industry is enhancement of technological innovation. A mechanism for reaching this goal was recently established by the federal government when it inaugurated two programs: industrial-university cooperative-research centers and engineering research centers. Through this approach, a number of firms may join with a university multidisciplinary center of excellence in a long-term program. The centers are resources of basic research and education for their industrial members. They provide environments in which communication occurs between academic and industrial scientists and between scientists in different industrial firms.

The advantages and potential problems associated with the research centers for industrial firms, universities, and government have been well summarized. Some progress has been made and some projects are producing tangible results. But many problems have yet to be resolved, especially those related to compromise of academic freedom and exclusivity for commercialization. As more experience is gained with the operation of the centers, mechanisms for dealing with the problems will be established. Understanding how to manage the relationship of the research center and its member firms is of prime importance if all participants are to benefit. Communication between the parties constitutes a substantial part of their relationship.

To better understand the communication process, an exploratory study was designed on how information is transferred between an engineering research center conducting biochemical and biochemical-engineering research at a major academic institution and its member firms.

METHODS

Telephone interviews were conducted with liaison persons in 47 member firms (their primary businesses are listed in Table 1). The interviewer began by asking each interviewee to tell how information obtained during the firm’s relationship with the center was used. Then the liaison person was asked to describe the type of information, its origins, followup after obtaining the information, and problems encountered if information was applied to development of a product or process. Finally, they were asked or volunteered the reasons their
firms maintain relationships with the center and how the relationships could be optimized. All answers and suggestions were volunteered by the interviewees without prompting by the interviewer, although occasionally, an interviewee was asked for clarification of a response.

The responses were tabulated under each of the areas covered in the interview. It was observed, as anticipated from previous studies, that a single response to a question is unlikely. Only the primary response is listed in the tables.

The liaison persons generally disseminated information obtained from the center throughout their firms. They would meet with, or occasionally, contact by memo or telephone the persons to whom they sent the information and discuss how it was used and what problems may have occurred in using it. The interviewees were therefore reporting both their own observations and the experiences of others. These responses provide an overview of the process involving information flow between the center and the firm.

RESULTS

Of the 47 firms participating in this study, 57% used the information they got from the center (Table 2). About one-third of those used their information to develop new products or processes. Eleven percent used the information to better grasp the capabilities or usefulness of their products. Eleven percent considered using the information at a later date for the development of products or processes. Forty-two percent of the firms had no specific use for the exchanged information and were in the group belonging to the center primarily to keep up-to-date on the latest developments in the area. A correlation between firm size and use was not apparent (data not shown).

Almost all equipment and software firms used center-provided information (data not shown). This may have occurred because these firm’s products are particularly useful to the scientific groups at the center. For example, newly developed software is tested at the center, or a scientific group at the center developed software that is applicable to their research and has commercial potential, or specific laboratory equipment is used and modified by the user so that the member firm producing it can incorporate the modification into its original product. Five percent of firms used the information to modify a procedure used in their research-and-development laboratory. A specific example is the establishment of tissue-culture facilities at a firm for research purposes.

In 53% of cases, the information obtained was of a specific scientific and technical nature (Table 3). It was usually gotten by direct contact with a scientific group at the center. In almost all of these instances, the information was used or will be used.

Table 2. Ways in Which Information Is Used

<table>
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<th>% of Firms</th>
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<td>New process or product 19</td>
<td>Modification of a process or product 13</td>
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<tr>
<td>Future process or product 11</td>
<td>Marketing purposes 11</td>
</tr>
<tr>
<td>System design 4</td>
<td>None 42</td>
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Forty-five percent of firms were only interested in general scientific and technical information. In those firms the information typically was acquired from literature sent to them or by attending annual symposia. Two percent of firms were interested in information about their products for marketing purposes. They did this by exchanging product information directly with the laboratories using their products at the center.

In the process of absorbing new information, situations can develop that prevent its use. (Table 4). Twenty-one percent had business priorities and they deferred use of the information to a later date. Of the 64% not having problems preventing use of the information, two-thirds had no specific use for it; half of the remaining one-third were either evaluating their products for future use or not yet ready to develop new products or processes.

The ideas that led to development of products or processes generally originated in the member firms, and usually were followed by visits with specific scientists or scientific groups at the cen-