



REGIONAL POLICY LETTER

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Industrial Extension: A Tool for Economic Development

Overview of Industrial Extension Programs

The first industrial extension program was initiated at North Carolina State University in 1955, followed by a program at Georgia Tech in 1956. By the late 1980s twenty-eight states had established industrial extension, or technology assistance, programs. Several programs were initiated with up to 50 percent Federal support through the National Institute of Standards and Technology (NIST). Fiscal year 1991 funding was an estimated \$83 million, with 45 percent and 24 percent coming from state and Federal sources, respectively. Other support came from industry contributions and user fees.

The initial programs were based on the Cooperative Extension Service model established decades earlier to modernize agriculture and improve the standard of living in rural areas by "extending" applied university research to farmers through a professional, locally based field staff. Experienced engineers were hired as industrial extension agents charged with assisting manufacturers with technology-related problems. The

agents were housed in regional offices across their respective states. The programs operated with a small core of campus-based staff and relied on faculty and student assistance to address firms' specific requests. As the number of industrial extension programs increased in the 1980s, their mission was broadened to provide manufacturing firms with a range of services related to total quality management, plant design and layout, quality assessment, equipment investment, strategic planning, computerization, information systems, networking, and workforce development.

The organization of industrial extension programs varies greatly across states. University-based programs account for about half of the programs. These programs are structured to have faculty and students, typically from engineering schools, assist firms in evaluating and solving a variety of technical problems. The applied experience complements students' classroom education; firms benefit through low cost consulting and access to current research of interest to the firm.

The structures of non-university programs vary and are

determined by the organizations that administer them: state agencies, community colleges, or non-profit or quasi-public organizations. New organizations were created to administer some programs, while existing organizations have assumed administrative responsibility for others. Programs are most often initiated with state funding. Program objectives are varied, but all focus on manufacturing competitiveness. Programs offer general technical assistance, specialize in specific technologies, or operate primarily as a technical referral service.

A key component in successful industrial extension programs is local involvement. Industrial extension programs with locally based offices and/or local partners can build local program ownership, a potential source of continued program support. Local offices can develop a keener awareness of specific local problems or opportunities and may have greater credibility within the community. Indiana's industrial extension program is organized in multi-county regions to insure local ownership and input.

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Indiana's Regional Manufacturing Extension Centers

The Indiana Business Modernization and Technology Corporation (BMT), a state-funded business technology institution, created Regional Manufacturing Extension Centers (RMEC) to address concerns about the viability of many of Indiana's small and medium-sized manufacturing firms. These firms generally have been slow to improve technology despite rapid changes in global competition that require firms to improve efficiency to stay in business. RMEC is a pro-active, locally-focused program that helps manufacturing firms identify and implement new technologies and management practices that will increase their competitiveness. RMECs assist firms in technology, training, marketing, product quality, environmental standards, business operations, and networking.

The RMEC program operates in 14 multi-county regions across the state. Each region is managed by one or more directors who generally have engineering and management backgrounds. The regional directors provide hands-on assistance to firms at no cost to the firm. RMEC regional offices are established in partnership with local business and/or development groups, such as a local Chamber of Commerce or economic development agency. The flexible structure allows the RMEC to be integrated into the region in a manner that improves understanding of the region and access to firms and resources.

The directors make calls on firms to offer assistance. The most comprehensive assistance is a complete business and financial

assessment. The assessment examines all aspects of the firm's operations to evaluate how well the firm is performing relative to various measures of industry and regional performance. Assistance is also provided in specific problem areas, such as a safety or product design problem, either as a follow-up to the initial assessment or in response to a specific request.

Results of RMEC Evaluation

Managers in a random sample of 76 firms that received assistance from Indiana's RMEC were interviewed to assess the impact that RMEC has had on manufacturing firms. The two RMECs that participated in the evaluation were well established and had assisted a large number of firms. Funding for the project was through a cooperative agreement with the U.S. Department of Agriculture's Economic Research Service.

Overall, the level of satisfaction with the RMEC program was very high. Most owners/managers were confident in the director, felt the director had the appropriate manufacturing experience to address the firm's needs, and felt the director was competent and professional in providing the assistance. Eighty percent of respondents said they were "satisfied" or "very satisfied" with the service received. Another 18 percent indicated that they were "uncertain" about the service, typically because they had only recently been served by RMEC. And only three percent indicated that they were "dissatisfied" or "very dissatisfied" with the RMEC service. A final gauge of satisfaction is whether or not the owner/manager would recommend RMEC to other firms. Ninety-

seven percent of respondents indicated that they would recommend RMEC to other firms.

Many firm managers view RMEC directors as an important "first source" of information for businesses. Firms commented on the referrals RMEC directors had made, linking them with other businesses or assistance providers to meet their particular needs. RMEC directors appear to be a central node in the business networking that occurs in these regions, providing information and assistance that link firms together. For many firms, this networking function is as important as any direct assistance that the RMEC director may provide. It is difficult to quantify the value of this service to business owners, although several interviewees indicated that the networking was the most important service received.

Type of Assistance Received by Firms

Over half the firms interviewed learned about RMEC through direct contact with the director. Almost 20 percent of firms were referred to RMEC by another agency in the region, e.g., financial institution or Chamber of Commerce. The director was the primary service provider for 95 percent of the firms. These results suggest that the qualifications of the director are important to the overall success of RMEC, since the director is the first and, in many cases, the only contact a firm has with the program. The directors in the two regions studied brought years of manufacturing experience to their jobs and had earned the confidence of the firms interviewed.

The full company and financial assessment is the broadest tool

RMEC directors can use in assisting firms. Four out of ten firms in this sample had a complete assessment done, while other firms received help on specific problem areas. The highest percent of firms received assistance with quality issues, such as ISO 9000 certification. Assistance with environmental/safety issues or product design/engineering was received by only 18 percent and 10 percent of firms, respectively. As discussed below, these two types of assistance were cited by firms as areas where more assistance was needed to help them improve competitiveness.

Future Outlook of Firms

More than half the owners/managers interviewed indicated that RMEC assistance affected their outlook for the future. And this outlook was generally very positive. Most firms saw in their future increased capital investment and employment, upgraded labor skills and physical facilities, and continued use of their current location. These firms expected to continue to have an impact on the local and regional economy in the next five years. Most firms expected to become more competitive in their current markets and to expand to compete in new markets in the future.

Some Monetary Impacts of RMEC Assistance

Past evaluations of industrial extension programs, generally, have asked firms to identify increases in sales or employment that resulted from the assistance received from the industrial extension program. Specific monetary impacts experienced by 20 percent of assisted firms averaged \$36,831, with a

minimum of \$2,300 and a maximum of \$164,000. These examples illustrate the type of impact RMEC can have on some firms. Some impacts are recurring over time, such as reduced labor needs or reduced rework rates. Others are one-time savings, such as for training grants or consultants.

Other Assistance to Improve Competitiveness

The interviews identified several areas where firms require additional assistance to improve their competitiveness. Labor force issues, particularly training for employees and assistance in managing employees, were mentioned by more than a third of respondents. Firms also require assistance meeting mandated requirements, such as those associated with ADA, OSHA, and EPA. Although only nine percent of respondents cited help with regulations as a specific area for assistance, concerns about regulatory burdens were raised by many firms during the interview process. In each of these two areas, programs could be designed to provide assistance to a number of firms, through networks or other programs. While training needs may vary from firm to firm, groups of firms with similar needs could be brought together for RMEC training. The other area of assistance mentioned by 10 percent of the firms, technical, engineering, and design assistance, will likely require continued one-on-one counseling with RMEC directors and referrals.

Conclusions

The evaluation of RMEC-assisted firms suggests that industrial extension programs can be critical components of state economic development programs.

Indiana's RMEC program has been successful in providing assistance to the 76 firms interviewed for this project. Owners/managers expressed a high level of satisfaction with the services received and with the RMEC directors. In addition to providing specific services to firms, the RMEC program plays a role in linking firms within the region and providing information to help firms become more competitive. These activities are more difficult to measure and quantify, but they represent an important impact of the RMEC program. In short, RMECs have helped Indiana firms maintain and improve their competitiveness.

For More Information

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