Manufacturing Extension Partnership Program: An Overview

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Summary

The Hollings Manufacturing Partnership (MEP) is a program of regional centers to assist small and medium-sized manufacturing companies use knowledge and technologies developed under the auspices of the National Institute of Standards and Technology (NIST). Centers in all 50 states and Puerto Rico provide technical and managerial assistance to firms. Federal funding is matched by non-federal sources. Existing resources in government, business, and academia are leveraged while the program endeavors to build on current state and local activities and industrial extension efforts.

The MEP program has, at times, been included in the discussion surrounding termination of government programs that provide direct federal support for industry. Questions have been raised in congressional debate as to the appropriateness of government funding for this program when the technologies are available in the marketplace. Instead of the government picking "winners and losers," opponents argue, the marketplace should make decisions regarding firms worthy of investment. However, proponents of the program stress that no direct funding is available to companies through MEP and that assistance is technical, scientific, and/or managerial. The Centers facilitate the adoption of new technologies that foster competition and promote innovation. As the 111th Congress makes budget decisions, support for manufacturing extension may be discussed in the context of the role of the federal government in facilitating research and technological advancement.

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Background

The trade debate in the mid-1980s, which ultimately resulted in passage of the Omnibus Trade and Competitiveness Act (P.L. 100-418), underscored the critical role of technological advance in the competitiveness of individual firms and in long-term national economic growth and productivity. Reflecting these and other ideas, legislation established a public-private program, now known as the Hollings Manufacturing Extension Partnership (MEP), to assist smaller, U.S.-based manufacturing firms in identifying and adopting new technologies. The focus on small and medium-sized companies derived from their perceived contribution to job creation, innovation, and manufacturing. Research at that time indicated that businesses of fewer than 500 employees were about 2.5 times as innovative per employee as large firms. The 341,000 firms that fit this category represent over 99% of the nation's manufacturing enterprises, employ over 10 million people, and account for 70% of total U.S. manufacturing employment.[1]

The improved use of technology by small and medium-sized businesses is seen as important to the competitiveness of American manufacturing firms. How a product is designed and produced often determines costs, quality, and reliability. Lack of attention to process technologies and techniques may be the result of various factors, including finances, absence of information, equipment shortages, and/or undervaluation of the benefits of technology. The purpose of the centers program is to address these issues through outreach and the application of expertise, technologies, and knowledge developed within the manufacturing research activities of the federal government.

The Program

Located at the National Institute of Standards and Technology (NIST), a laboratory of the Department of Commerce, the Manufacturing Extension Partnership program is built on regional centers to assist companies in adopting and adapting new technologies and manufacturing techniques generated by the federal agencies in pursuit of their various missions. The transfer of public sector expertise, particularly that found in NIST, as well as technology suited to the individual requirements of a firm, is to be accomplished through a "manufacturing extension" system. Federal funding is offered on a competitive basis to nonprofit, state, or local organizations for development and management of the centers. Government financing was initially limited to six years, a provision temporarily suspended by the FY1997 and FY1998 appropriations acts, and eliminated by P.L. 105-309. Non-federal sources are required to provide 50% or more of each center's capital and costs through matched dollars, fees for service collected, and/or industry contributions. After six years, federal funding may be provided at no more than one-third of these costs if the center has received a positive, independent evaluation.

Centers are selected in response to open and competitive solicitations and are merit based. According to NIST, the selection criteria include "knowledge of target firms in the proposed region; linkages to sources of technology; technology delivery mechanisms; and management and financial plans." The sponsor, locally based, is expected to provide expertise reflecting the needs

[1] Manufacturing Extension Partnership, *Making A Difference For America's Manufacturers*, available online at http://www.mep.nist.gov/documents/pdf/about-mep/impacts/2007-MEP_MakingDifference21207.pdf.

of the business community and the type of industries in that region. No direct financial support is available for companies; the program offers only technical and managerial assistance that is generally reimbursable on a sliding scale.

The original regional centers program expanded in 1994, creating the Manufacturing Extension Partnership. There are now centers in all 50 states and Puerto Rico. Since the program was established 1989, awards have resulted in the creation of approximately 350 offices. NIST also took over support of 36 extension centers originally funded by the Department of Defense through the Technology Reinvestment Project which was terminated in FY1994.

Centers offer expertise, needs evaluation, application demonstrations for new production technologies, training, and information dissemination. Larger, regional organizations use federal, university, and private sector technologies, knowledge, and skills in providing improved manufacturing techniques designed to increase efficiency and quality and to decrease costs. They also can furnish individual project engineering, help in selecting and employing software and equipment, factory assessments, and provide on-site assistance with new technologies. Managerial, financial, and marketing services are accessible. No new R&D is conducted by the centers which only use technologies available elsewhere in the network. One center may have several field offices to provide support to a broader population. Generally these programs are associated with operating technical or training institutions such as community or technical colleges, vocational institutions, university manufacturing programs, or state technical assistance efforts. They are located in areas of the country where there is less industrial concentration and serve companies out of range of the larger programs.

The Partnership leverages existing resources—whether from government, business, or academia. It does not attempt to supplant the private sector. The program endeavors to build on existing state and local activities and industrial extension efforts. According to NIST, cooperative efforts involve other federal agencies, the National Association of State Development Agencies, the State Science and Technology Institute, the National Association of Manufacturers, and various universities and community colleges.

Funding

Initial appropriations for NIST manufacturing extension programs totaled $12.5 million for FY1989 and FY1990. Further funding included $11.9 million in FY1991, $15.1 million in FY1992, and $16.9 million in FY1993. In FY1994, the State Technology Extension Program was combined with the centers' activity to create the Manufacturing Extension Partnership. Appropriations for the larger effort totaled $30.3 million. Funding for FY1995 was $90.6 million and included a new program, LINKS, to network federal, state, and local agencies, the private sector, and the manufacturing outreach institutions through communications and data systems. However, $16.3 million of this amount was rescinded. MEP was provided with $80 million for FY1996 and P.L. 104-208 provided $95 million for FY1997 while temporarily removing the six-year time limit for federal support of the individual centers. For FY1998, $113.5 million was appropriated while the following year MEP was funded at $106.8 million, which reflected a decrease in the federal share of support as the centers matured. P.L. 105-309 ended the six-year restriction on federal funding if a positive evaluation through an independent review is received at least every two years. Federal financing is limited to no more than one-third of the annual operating and maintenance costs of the center. For FY2000, the Partnership was financed at

$104.2 million (after a mandated rescission) and $105.1 million was appropriated for FY2001. In FY2002, MEP received $106.5 million in funding.

The Bush Administration's FY2003 request of $12.9 million for the Partnership reflected the recommendation that centers in operation for more than six years no longer receive federal support; however, funding totaled $105.9 million. The following year, the President's FY2004 budget again included a significant reduction in support for the extension program and only $38.7 million was appropriated. Funding increased to $107.5 million in FY2005. While the Administration's FY2006 and FY2007 budgets included substantial decreases in financing for MEP, Congress appropriated $104.6 million in FY2006 and $104.6 million in FY2007.

In FY2008, the President's budget proposal included $46.3 million for MEP, 56% below the FY2007 figure; however the program was funded at $89.6 million which was 14.4% below the previous fiscal year. For FY2009, the Bush Administration's amended budget request provided $2 million to close out the federally funded portion of MEP. No final FY2009 appropriations legislation for the program was enacted by the close of the 110th Congress. P.L. 110-329, the Consolidated Security, Disaster Assistance, and Continuing Appropriations Act, 2009, provided, in part, funding for MEP at FY2008 levels through March 6, 2009. P.L. 111-8, the FY2009 Omnibus Appropriations Act, provided $110.0 million in support for manufacturing extension, a 22.8% increase over FY2008.

The President's FY2010 budget request and H.R. 2847, the Commerce, Justice, Science, and Related Agencies Appropriation Act, 2010, as passed by the House and as reported by the Senate Committee on Appropriations, would fund MEP at $124.7 million, a 13% increase over the current fiscal year.

Evaluations of the Manufacturing Extension Partnership

In an August 1995 briefing paper, the General Accounting Office (GAO)explored how small and medium-sized firms were served by various manufacturing extension efforts, including the MEP program (*Manufacturing Extension Programs, Manufacturers' Views of Services*). Of the 551 responses (to 766 questionnaires distributed), approximately 73% found that their relationships with an extension activity had a positive effect on the company's business performance. Fifteen percent indicated that there was no effect at all. Among the impacts identified were improved use of technology (63%), better product quality (61%), and expanded productivity (56%). According to GAO, this suggested that manufacturing extension activities "had some success in achieving their primary goal of helping manufacturers improve their operations through the use of appropriate technologies and through increases in product quality and worker productivity." The study also found that companies which used internal funding to implement recommendations offered by extension programs were the most likely to find an overall positive impact. "Significantly, approximately 97 percent of [these respondents] ... said that they believed that this investment had been worthwhile." Those who utilized these organizations noted that practical experience in the field contributed to the success of staff activities, as did the affordability of the assistance. Companies that did not utilize the resources provided by the MEP tended to be those that were unaware of the program and the opportunities associated with it.

Further refining this information in a March 1996 report, *Manufacturing Extension Programs, Manufacturers' Views about Delivery and Impact of Services*, GAO also noted that company size and age were significant factors in business perceptions the extension program. Smaller (under $1 million gross sales) and newer (established after 1985) firms "were most likely to report that their overall business performance was boosted by MEP assistance." While there were no real differences in perception between extension services offered by NIST and those funded by other institutions, there was a difference in assessments of effectiveness based on whether or not payment was required. According to GAO, those firms that paid fees "were half as likely as those that paid no fees to credit the assistance for having an extremely positive impact, as opposed to a generally positive impact, on their business performance."

According to NIST, MEP centers have responded to more than 310,000 requests for assistance since the program's inception.[2] Regular reporting is required of the centers, covering the number and type of projects undertaken. Centers also are mandated to collect information that may provide indicators of longer-term results, including changes in sales, financial investments, inventory reduction, savings in labor and materials, and jobs created or saved. In a survey of clients using the centers during FY2005, NIST found that the 4,726 companies responding indicated that 53,000 jobs were retained or created, $6.3 billion in sales were increased or retained, and $2.2 billion in new private sector investment was placed in plant modernization and training.[3]

The National Academy of Public Administration also studied the MEP program and found that while "on balance ... the MEP Program performs capably and effectively and that the core premise ... remains viable as it is fulfilling its mission by leveraging both public and private resources to assist the nation's small manufacturers," there should be consideration of a "fundamental change in the mix of the types of services it provides as well as the structures for delivering them.... "[4] As such, a Next Generation Strategic Plan has been developed by the Partnership to concentrate on not just the shop floor but on "the entire enterprise and its position in the marketplace." In addition to individual manufacturing firms, MEP "must focus on industry/supply chain requirements as well as overall economic development trends."[5]

Issues and Concerns

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[2] *Making a Difference for America's Manufacturers*.

[3] Manufacturing Extension Partnership, *Delivering Measurable Returns to Its Clients, Fiscal Year 2005 Results*, available at http://www.mep.nist.gov/documents/pdf/results/FY2005_MEP_DMR_final_3107.pdf.

[4] National Academy of Public Administration, The Manufacturing Extension Partnership Program, Report 2, Alternative Business Models, May 2004, available at http://www.napawash.org/Pubs/NIST6-2-04.pdf.

[5] Manufacturing Extension Partnership, *Next Generation Strategic Plan*, available at http://www.mep.nist.gov/documents/pdf/about-mep/Next_Gen_MEP_Strategy.pdf.

managerial. The Centers facilitate the adoption of new technologies that foster competition and promote innovation.

Congress continues to explore the issue of manufacturing extension within the context of federal support for research and development. Until FY2004, despite some opposition to the Manufacturing Extension Partnership, there had been continued and generally increased funding for the program. The lower level of appropriations for FY1999 and FY2000 reflected a decrease in the federal portion of center financing as the programs surpass the original six-year funding limit, not declining congressional support for the activity. The ongoing involvement and financial backing of state and local organizations may indicate additional, widespread commitment to a program designed to expand private sector use of manufacturing technologies already funded by the government and developed by the agencies in response to their mission requirements. While the Bush Administration's budget proposals continued to call for substantial reductions in support for MEP, with the exception of FY2004, the Congress had appropriated full funding for the centers program although in FY2008 support fell 14.4% from the previous fiscal year. The final FY2009 appropriations legislation provided a large increase in financing for manufacturing extension initiatives. Both the President's FY2010 budget request and H.R. 2847, as passed by the House and reported from the Senate Committee on Appropriations, again include a significant increase in support for MEP.

In a related development, the America COMPETES Act (P.L. 110-69) authorized the creation, but did not fund, several new manufacturing programs to be administered by NIST including collaborative manufacturing research pilot grants for partnerships between industry and other educational or research institutions to develop new manufacturing processes, techniques, or materials; a manufacturing fellowship program with stipends available for post-doctoral work at NIST; and a manufacturing research database. These activities differ from the established MEP effort in which no new manufacturing research is conducted as existing manufacturing technology is applied to the needs of small and medium-sized firms.

The issue of the statutory six-year limitation on government financing of individual centers was addressed by the Technology Administration Act of 1998 (P.L. 105-309). Yet, questions still remain, particularly in light of efforts by the Bush Administration and past efforts by the House to reduce federal support for the centers. The original intent of the funding restriction was to encourage the centers to be self-supporting. That does not appear to be feasible at the present time. Questions remain as to whether or not the centers are providing the help that companies are willing to pay for or are reimbursements too costly for the small firms the program is intended to assist. Some commentators are exploring what additional roles might state and local government play in supporting centers and if it is possible to attract more resources from industrial providers of new manufacturing technologies and techniques. These and other issues may be considered within the context of future government funding for the Manufacturing Extension Partnership and overall federal support for research and technological advancement.

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