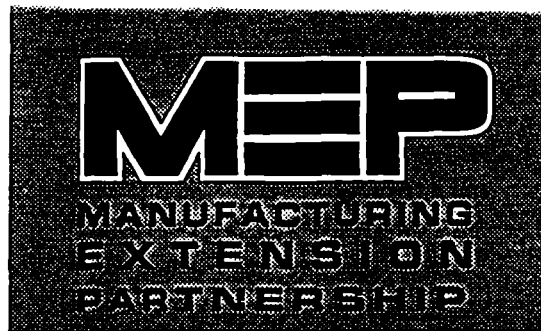




"Smaller manufacturers play an important role in the competitiveness of American industry. They comprise the bulk of manufacturing establishments, are integral parts of the supply chain for both commercial and defense products, and provide the vast majority of manufacturing employment.

Many of these small firms, however, are operating far below their potential. Their use of modern manufacturing equipment, methodologies, and management practices is inadequate to ensure that American manufacturing will be globally competitive."

**"Learning to Change"
National Research
Council, 1993**

THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST) is leading a broadbased effort to build a nationwide system of technology services for the nation's smaller manufacturers. This Manufacturing Extension Partnership (MEP) is designed to be a comprehensive, yet locally responsive, network that helps firms upgrade their equipment, improve their processes, and strengthen their business performance. Each center, state, and partnering organization in the growing MEP network will be an entry point into an integrated national system of technical resources, services, and expertise.

The MEP builds on NIST's successful experiences in manufacturing extension and on productive partnerships forged with public and private organizations at the national, state, and local levels.

In 1988, Congress directed NIST to begin helping the nation's smaller manufacturers to adopt and apply performance-improving technologies as demanded by intensifying domestic and global competition in manufacturing. Over the next several years, NIST

and cooperating state and local organizations established a handful of regional Manufacturing Technology Centers (MTCs) that provide a range of hands-on technical assistance to companies. NIST also initiated the State Technology Extension Program (STEP) that provides grants to help states to build their own infrastructure for industrial outreach services. Although small in scale, these pilot programs yielded tangible benefits greatly exceeding the federal investment. This success illustrated the large potential impact that manufacturing extension programs can have on company performance and local economies.

Recognizing this potential, the Clinton Administration has set the goal of creating a nationwide network of extension centers. Through the MEP, it aims to establish 100 manufacturing centers nationwide by 1997 to assist manufacturers to modernize their production capability.

How is the Manufacturing Extension Partnership carrying out this national strategy?

MEP is developing a critical infrastructure designed to deliver regional and national sources of information, expertise, and assistance regarding the use of modern manufacturing processes and production technologies. The infrastructure includes:

- Manufacturing Extension Centers;
- the State Technology Extension Program (STEP); and
- Links—a coordinated system to bring information, services, and resources to the centers and to firms.

What are Manufacturing Extension Centers?

Manufacturing extension centers are non-profit organizations that serve as the focal point for delivering services to smaller manufacturers. The centers include and are modeled after seven Manufacturing Technology Centers (MTCs), which were established by NIST starting in 1989. Some of the future manufacturing extension centers will be similar in size and scope to the original MTCs; others, smaller in size and scope. Some will be affiliated with larger centers.

Like the original MTCs, extension centers are partnerships that typically involve state and federal governments; industry; educational institutions; and other sources of expertise, information, and funding support.

What services do Manufacturing Extension Centers provide?

Manufacturing extension centers are designed to bridge a "technology gap" between sources of improved manufacturing technology and the small and mid-sized companies that need it. Center staff actively work with companies through one-on-one assistance and in groups organized around common needs, industries, or technologies.

While each center tailors its services to meet the needs dictated by its location and manufacturing client base, there are some common services that are offered by most extension centers. Broadly, those services include helping manufacturers assess their current technology needs and competitive position, understand and undertake fundamental company changes, and define and implement company-specific technology projects. The centers also may assist companies with workforce training, workplace organization, business systems,

marketing, or financing issues by working with other federal, state, or local organizations.

In each case, the extension centers encourage manufacturers to establish programs for continuous improvement, rather than just working to solve the company's immediate production problems. All centers rely on outreach by field agents who provide on-site advice and assistance to companies.

In addition, some of the centers provide demonstration facilities that display manufacturing equipment, computer hardware/software, etc. Some centers also offer shared manufacturing facilities and/or teaching factories.

How are Manufacturing Extension Centers created?

Centers are created through an open and competitive process. The process begins with a Request for Proposal posted in the *Federal Register* or *Commerce Business Daily*. Specific funding provisions and evaluation criteria that apply to that solicitation for proposals appear in the notice. NIST can not accept proposals unless they are in response to a specific solicitation.

In general, proposals are evaluated and selected based on:

■ Knowledge of target firms in the proposed region—an understanding of the region's manufacturing base, including business size, industry types, product mix, and technology requirements. In-depth understanding of the needs of this target population is of paramount importance.

■ Technology resources—internal expertise and linkages to external sources of technology, including federal labs such as NIST, educational institutions, or state or regional technology transfer programs. In addition, it is important to demonstrate linkages to essential related services, including workforce development, business system development, marketing, and financing.

■ Technology delivery mechanisms—the staff, resources, and methodology for effectively delivering improved manufacturing technologies and techniques to small and medium-sized manufacturers, as well as the ability to form effective partnerships or linkages to third parties capable of serving a large number of clients in the region.

■ Management and financial plan—an effective management structure, full-time top management, additional sources of funds, and an effective system of continuous internal evaluation.

Where are the Manufacturing Extension Centers located?

A list of the centers and their locations is included at the end of this fact sheet.

How are the centers funded?

Some of the MEP extension centers are funded directly by NIST. Other MEP centers are funded through the Department of Defense's Technology Reinvestment Project as part of the government's efforts to assist manufacturing firms in becoming less dependent on the defense market and better able to compete in commercial markets. The DoD funds are awarded for an average of two to three years, at which time extension centers that meet MEP performance requirements will be eligible for additional funding consideration through NIST.

The centers are *not* part of the federal government. Each center must be sponsored by a U.S.-based, non-profit organization, possibly a state government agency or an educational institution.

The local sponsor must contribute 50 percent or more of the proposed center's capital and annual operating and maintenance costs. For larger centers, at least

50 percent of the sponsor's contribution must be in cash. For smaller centers, the sponsor's share may consist largely of in-kind contributions.

What kind of impact are the centers having?

By helping smaller manufacturers improve their operations and use appropriate technology to modernize production, MEP is helping companies achieve bottom-line results. These results are measured through reduced costs, increased sales, improved productivity and product quality, enhanced customer satisfaction, and greater profits.

Based on these measurements, companies working with the original seven NIST centers through September 30, 1993, estimate collective bottom-line results totaling \$320 million—achieved through a federal investment of \$54 million.

These results—and the corresponding changes that firms make with the centers' assistance—improve manufacturers' abilities to compete, to grow, and to sustain high-wage, high-quality jobs that strengthen the U.S. manufacturing base.

What is the State Technology Extension Program?

The State Technology Extension Program (STEP) works with states to develop coordinated manufacturing extension and modernization programs to serve the competitive needs of small and medium-sized businesses. The program provides support for states to:

- plan extension systems or technical assistance programs. Specific planning projects may include definition of industry needs, assessment of existing extension resources, development of a statewide strategic plan for strengthening existing industry and pilot implementation projects.
- implement such programs in sparsely populated regions. Typical examples might be creating a statewide network of industrial extension agents to provide advice and assistance on implementing new technologies, or a pilot project to provide technology assistance to a particularly important industrial sector in the state.
- develop links between existing programs and those in other regions to enhance effectiveness.

How are STEP grants funded?

STEP grant projects must be sponsored by a U.S.-based non-profit organization, possibly a state government agency. NIST accepts applications for STEP grants *only in response to specific solicitations*, which are posted in the *Federal Register* or *Commerce Business Daily*. All solicitations are open and competitive.

STEP grants provide *matching funds*—the sponsor generally is required to put up at least 50 percent of the cost of the proposed project. Specific requirements will vary with each solicitation.

What is Links?

MEP's Links is a coordinated service, technology, and information infrastructure designed to provide tools and resources that can serve extension efforts nationwide.

Included in the developing infrastructure are joint projects with organizations at the national and local levels to establish national interactive satellite telecasts on topics of interest to manufacturers; national training programs for extension agents; and common extension tools, such as automated software for assisting extension agents in assessing a manufacturer's operations.

In addition, Links will bring manufacturing-related information, databases, and sources of technology to extension centers and manufacturing companies.

Why is it needed?

A variety of public and private sources of information and technology services already exist. These services, however, are widely dispersed and are not readily accessible to many smaller manufacturers, who, according to studies, have difficulty finding unbiased sources of information and assistance. Links is designed to join existing technical resources and MEP centers into a flexible network that is readily accessible to service providers working with companies. It also is intended to stimulate innovation in the design and delivery of services, while, at the same time, preventing needless duplication of efforts and resources.

A key feature of Links will be the use of national electronic networks to connect all of the manufacturing extension centers as well as other partnering organizations, such as federal laboratories and universities. This electronic networking not only will provide more rapid communica-

tion, it also will provide access to lists of technical experts and databases of best manufacturing practices and other technical information.

What Links are being developed?

The Manufacturing Extension Partnership has been working closely with federal agencies and other organizations to identify services, technology, and information that may benefit manufacturers. MEP is providing the link for these agencies to make manufacturers aware of the services they offer. Examples of these (which follow) include agreements between NIST and other agencies as well as projects funded directly by NIST and through the Technology Reinvestment Project:

- a cooperative agreement with the Small Business Administration to facilitate access of extension center client firms to the SBA's business development loan guarantee program, and to provide the SBA with access to the center's technical expertise for evaluating loan proposals;
- a developing partnership with the Environmental Protection Agency, state pollution prevention programs, and related organizations to assist smaller manufacturers in becoming environmentally competitive;
- a program developed in part by the National Technological University to sponsor a series of interactive telecasts—broadcast by satellite to extension center sites and other locations around the country—on specific technical subjects of interest to small and medium-sized manufacturers;
- a cooperative agreement with the Department of Labor to help identify opportunities for DoL and MEP to work together to better support the human resource/training needs of client companies;
- a pilot project in Texas to provide an affordable electronic network that is easy to use and provides applications specifically targeted to meet small manufacturers' needs;
- a project with Production Technology, Inc., Tufts University, and Microelectronics & Computer Technology Corporation to

electronically link manufacturing extension centers and other extension service providers to each other, and to a number of technology sources; and

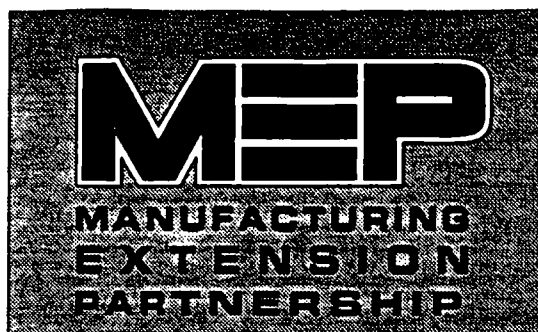
- a project establishing a consortium of 10 states to spur the design and implementation of manufacturing networks and other approaches to inter-firm cooperation.

MEP also hosts "visiting staff" members from organizations so they may familiarize themselves with the program and develop manufacturing extension links to their own operations.

How can I get more information about MEP?

You can get more information from the Manufacturing Extension Partnership office at:

(301) 975-3593 (phone)
(301) 963-6556 (fax)
MEPinfo@micf.nist.gov (e-mail)
or MEP
Building 224, Room B115
National Institute of Standards and Technology
Gaithersburg, MD 20899-0001



J U L Y 1 9 9 4

MANUFACTURING EXTENSION CENTERS

The growing network of manufacturing extension centers includes both established operations and new centers now coming on-line. They are listed alphabetically by state. The original seven Manufacturing Technology Centers (MTCs) are:

California Manufacturing Technology Center (CMTC)

in Hawthorne, Calif. Established in 1992 and affiliated with the El Camino Community College District, the California Trade and Commerce Agency, the California Community Colleges, and the California Employment Training Panel. *Contact: Ms. Joan Carvell (acting), 13430 Hawthorne Blvd., Hawthorne, Calif. 90250, (310) 355-3060.*

Mid-America Manufacturing Technology Center (MAMTC)

in Overland Park, Kan., and other locations in Kansas, Colorado, and Missouri. Established in 1991 and affiliated with the Kansas Technology Enterprise Corp. In 1994, two new regions in Missouri

and Colorado received funding to assist manufacturers. The centers will operate under the MAMTC name. *Contact: Mr. Paul Clay, 10561 Barkley, Suite 602, Overland Park, Kan. 66212, (913) 649-4333.*

Midwest Manufacturing Technology Center (MMTC)

in Ann Arbor, Mich. Established in 1991 and operated by the Industrial Technology Institute. *Contact: Mr. John Cattier, Industrial Technology Institute, P.O. Box 1485, 2901 Hubbard Road, Ann Arbor, Mich. 48106, (800) 292-4484.*

Upper Midwest Manufacturing Technology Center (UMMTC)

in Minneapolis, Minn. Established in 1992 and operated by Minnesota Technology, Inc. *Contact: Ms. Sandy Voigt, Minnesota Technology, Inc., 111 Third Avenue South, Suite 400, Minneapolis, Minn. 55401, (612) 654-5201.*

New York Manufacturing Extension Partnership (NYMEP)

formerly called the Northeast Manufacturing Technology Center, in Troy, N.Y., at the Rensselaer

Technology Park. Established in 1989 and operated by the New York State Science and Technology Foundation. In 1994, four other regions in New York received funding to assist smaller manufacturers. The four centers will operate under the NYMEP name. *Contact: Mr. Mark Tebbano, Rensselaer Technology Park, 385 Jordan Road, Troy, N.Y. 12180-8347, (518) 283-1010.*

Great Lakes Manufacturing Technology Center (GLMTC)

in Cleveland, Ohio. Established in 1989 and affiliated with the Cleveland Advanced Manufacturing Program. *Contact: Dr. George Sutherland, Prospect Park Building, 4600 Prospect Avenue, Cleveland, Ohio 44103-4314, (216) 432-5322.*

Southeast Manufacturing Technology Center (SMTC)

in Columbia, S.C. Established in 1989 and operated jointly by the University of South Carolina and Enterprise Development, Inc. *Contact: Mr. James Bishop, P.O. Box 1149, Columbia, S.C. 29202-1149, (803) 252-6976.*

Recently funded manufacturing extension centers include centers similar in size and scope to the originally established MTCs and centers that are smaller in size and scope. The following are being established as larger centers (again, listed alphabetically by state):

**Georgia Manufacturing
Extension Alliance**

headquartered in Atlanta, with 17 regional offices in Georgia. Established in 1994 and affiliated with Georgia Tech's Economic Development Institute, the Georgia Department of Technical and Adult Education, the University of Georgia Small Business Development Centers, and Georgia Power Co. *Contact: Mr. Charles Estes, Georgia Institute of Technology, 223 O'Keefe Building, Atlanta, Ga. 30332, (404) 894-8989.*

**Chicago Manufacturing Technology
Extension Center**

in Chicago, Ill. Established in 1994 and affiliated with the Economic Development Commission of the City of Chicago. *Contact: Mr. Rheel Turcotte, Homan Square, 3333 West Arthington, Chicago, Ill. 60624, (312) 265-2020.*

**Iowa Manufacturing Technology
Center (Iowa MTC)**

in Ankeny, Iowa. Established in 1994 and affiliated with Iowa State University and the Des Moines Area Community College. *Contact: Mr. Del Shepard (acting), Des Moines Area Community College, 2006 South Ankeny Boulevard, Building 18-EDG, Ankeny, Iowa 50021, (515) 965-7040.*

**Massachusetts Manufacturing
Partnership (MMP)**

in Boston, Mass. Established in 1994 with the Massachusetts Executive Office of Economic Affairs and the Bay State Skills Corp. *Contact: Ms. Jan Pounds, Bay State Skills Corp., 101 Summer Street, 4th Floor, Boston, Mass. 02110, (617) 292-5100, ext. 271.*

**New Mexico Manufacturing
Extension Program**

in Albuquerque, N.M. Established in 1994 through the New Mexico Industry Network Corp. *Contact: Mr. Bill Rector, New Mexico, Inc., 1601 Randolph Road, SE, Suite 210, Albuquerque, N.M. 87106, (505) 272-7800.*

**Pennsylvania Manufacturing
Extension Program:
North/East Region**

in Bethlehem, Pa. Established in 1994 and affiliated with the Manufacturers Resource Center. *Contact: Ms. Edith Ritter, Manufacturers Resource Center, 125 Goodman Drive, Bethlehem, Pa. 18015, (610) 758-5599.*

**Western Pennsylvania
Manufacturing Extension Program**

in Pittsburgh, Pa. Established in 1994 and affiliated with the Southwestern Pennsylvania Industrial Research Center. *Contact: Mr. Ray Christman, 4516 Henry Street, Pittsburgh, Pa. 15213, (412) 687-0200, ext. 234.*

**Tennessee Manufacturing
Extension Program**

in Nashville, Tenn. Established in 1994 and affiliated with the State of Tennessee Economic and Community Development Department and the University of Tennessee. (in process)

**Virginia Alliance for Manufacturing
Competitiveness (VAMC)**

in Richmond, Va. Established in 1994 and affiliated with the Virginia Department of Economic Development. (in process)

The following extension centers are smaller in size and scope (listed alphabetically by state):

**Arizona Applied
Manufacturing Center**

in Phoenix, Ariz. Established in 1994 and operated by the Precision Machining Institute in affiliation with the Maricopa County Community College District. *Contact: Mr. Charles Klement, c/o Gateway College, 108 N. 40th Street, Phoenix, Ariz. 85034, (602) 392-5184.*

Pollution Prevention Center

in Santa Monica, Calif. Established in 1994 through the Institute for Research and Technical Assistance. *Contact: Ms. Katy Wolf, Institute for Research & Technical Assistance, 2800 Olympic Blvd., Suite 101, Santa Monica, Calif. 90404, (310) 453-0450.*

MAMTC Colorado Regional Office

in Fort Collins, Colo. Established in 1994 and affiliated with the Mid-America MTC and Colorado State University. *Contact: Mr. Craig Carlile, Rockwell Hall, Colorado State University, Fort Collins, Colo. 80523, (303) 224-3744.*

Connecticut State Technology Extension Program

in Storrs and New Britain, Conn. Established in 1994 and affiliated with the Connecticut Department of Economic Development. *Contact: Mr. Peter Laplaca, 368 Fairfield, Storrs, Conn. 06269-2041, (203) 486-2585.*

Delaware Manufacturing Alliance

in Dover, Del. Established in 1994 and affiliated with the Delaware Development Office. *Contact: Mr. John J. Shwed, Delaware Technology Park, One Innovation Way, Suite 301, Newark, Del. 19711, (302) 452-2522.*

Kentucky Technology Service

in Lexington, Ky. Established in 1994 and affiliated with the Kentucky Economic Development Cabinet. *Contact: Mr. Kris Kimel, P.O. Box 1049, Lexington, Ky. 40588, (606) 233-3502.*

Maryland Manufacturing Modernization Network

in Baltimore, Md. Established in 1994 and affiliated with the Maryland Department of Economic and Employment Development. *Contact: Mr. Edwin Gregg, Jr., Maryland Department of Economic Development, Division of Business, 217 East Redwood Street, Baltimore, Md. 21202, (410) 333-6990.*

MAMTC Southern Missouri Regional Office

in Rolla, Mo. Established in 1994 and affiliated with the Mid-America MTC and the Missouri Enterprise Business Assistance Center. (in process)

Nebraska Industrial Competitiveness Service (NICS)

in Lincoln, Neb. Established in 1994 and affiliated with the Mid-America MTC and the Missouri Enterprise Business Assistance Center. (in process)

Hudson Valley Manufacturing Outreach Center

in Fishkill, N.Y. Established in 1994 and affiliated with the NYMEP and the New York State Science and Technology Foundation. *Contact: Mr. Douglas Koop, Hudson Valley Technology Development Center, 300 Westage Business Center, Suite 140, Fishkill, N.Y. 12524, (914) 896-6934.*

Manufacturing Outreach Center of N.Y.-Southern Tier

in Endicott, N.Y. Established in 1994 and affiliated with the NYMEP. *Contact: Mr. Mike Dziak, UniPEG, 1310 North Street, Endicott, N.Y. 13760 (607) 748-9214.*

New York City Manufacturing Outreach Center

in New York City, N.Y. Established in 1994 and affiliated with the NYMEP. *Contact: Ms. Sara Garretson, NY ITAC, 253 Broadway, Room 302, New York, N.Y. 10007, (212) 240-6920.*

Western New York Manufacturing Outreach Center

in Amherst, N.Y. Established in 1994 and affiliated with the NYMEP. *Contact: Ms. Betsy Poole, Western NY Technology Development Center, 1576 Sweet Home Road, Amherst, N.Y. 14228, (716) 636-3626.*

Defense Enterprise Empowerment Project (DEEP)

in Kettering, Ohio. Established in 1994 and affiliated with the Edison Materials Technology Center. (in process)

Plastics Technology Deploy Center (PTDC)

in Cleveland, Ohio. Established in 1994 and affiliated with the Great Lakes MTC. *Contact: Mr. David Thomas-Greaves, GLMTC Manufacturing Outreach Program Prospect Park Building, 4600 Prospect Avenue, Cleveland, Ohio 44103, (216) 432-5300.*

Oklahoma Alliance for Manufacturing Excellence

in Tulsa, Okla. Established in 1994 and affiliated with the Oklahoma Center for the Advancement of Science and Technology. *Contact: Mr. Edmund J. Farrell, 525 South Main, Suite 500, Tulsa, Okla. 74103, (918) 592-0722.*

A.L. Philpott Manufacturing Center

in Martinsville, Va. Established in 1994 and affiliated with the Southeast MTC. *Contact: Mr. John D. Hudson, Jr., 231 East Church Street, Martinsville, Va. 24112, (703) 666-8890.*

Washington Alliance for Manufacturing

in Seattle, Wash. Established in 1994. *Contact: Ms. Peggy Flynn, 2401 Utah Avenue South, Suite 700, Seattle, Wash. 98134, (206) 622-3456.*

Northwest Wisconsin Manufacturing Outreach Center

in Menomonie, Wis. Established in 1994 and affiliated with the University of Wisconsin-Stout. (in process)