

The Future of the Hollings Manufacturing Extension Partnership

A Program of the National Institute of Standards and Technology,
U.S. Department of Commerce



**MEP • MANUFACTURING
EXTENSION PARTNERSHIP**

NATIONAL INSTITUTE OF
STANDARDS AND TECHNOLOGY



Executive Summary

This document describes the future strategic direction for the Manufacturing Extension Partnership - MEP. Manufacturers in the United States are facing significant challenges. There is a constant pressure to cut costs, improve quality, meet environmental and international standards, and get to market faster with new and improved products, all in a larger, more competitive, global playing field. As manufacturers struggle to keep pace with accelerating changes, MEP's mission has become more critical than ever to individual manufacturing firms, industrial communities, and the American manufacturing sector as a whole. Over its 20-year existence, MEP has proven its value to manufacturers as demonstrated by the resulting impact on jobs and the economies of all 50 States and the U.S. as a whole. Now is the time to build on these experiences to expand the capacity and capabilities of the MEP nationwide network to address the challenges facing manufacturers. With this goal in mind, this document describes the vision, mission and approaches MEP will take to support manufacturers to improve their competitive position, to grow their business, and to maintain a strong manufacturing base in the U.S.

VISION

MEP is a catalyst for strengthening American manufacturing - accelerating its ongoing transformation into a more efficient and powerful engine of innovation driving economic growth and job creation.

MISSION

To act as a strategic advisor to promote business growth and connect manufacturers to public and private resources essential for increased competitiveness and profitability.

Importance of Manufacturing in the United States

A strong manufacturing base is critical to the financial and national security of the United States. **U.S. manufacturing firms employ over 13 million people in high-paying jobs with benefits, represent roughly two-thirds of total U.S. research and development expenditures, and account for more than 80 percent of all U.S. exports.** If the U.S. manufacturing sector were a country, it would be the 8th largest country in terms of gross domestic product (GDP) in the world. Manufacturing creates millions of jobs, directly and indirectly, in a wide range of related industries. These include business services such as accounting, marketing, legal support, shipping, and warehousing as well as millions more indirect jobs in other local industries. Beyond these services supporting the extended manufacturing enterprise, the broader U.S. service economy also depends increasingly on the adoption of technologies from the manufacturing sector to keep pace with global competition.

Current Manufacturing Landscape The Challenges

Manufacturers must master innovative product design, understand the benefits of adopting environmentally sustainable processes, invest in human and physical capital, leverage a range of financing options, realize international trade opportunities, and forecast future customer demands -- even before the customer knows their needs.

Manufacturers, particularly small and mid-sized manufacturing firms, are facing new and significant challenges. While efficient shop floor operations of a firm represent a large part of manufacturing, efficiency alone is not sufficient in the new global marketplace. Technology and globalization have fundamentally changed many manufacturing companies and products. This has led in turn to a new era of cost pressures, shortened product life cycles, technology that is diffusing rapidly on a global scale, and production that now involves orchestrating networks of suppliers. Manufacturing increasingly depends on access to customers and the infrastructure needed to support the constant reinvention of their products and processes. The challenge is clear: **Increasing global competition coupled with the changing nature of innovation demands the U.S. not rest on a strategy of simple productivity improvements.**

Modern day manufacturing requires not only an efficient production system but also developing business strategies that highlight the unique capabilities of a firm and demonstrate their advantages over competitors. This means manufacturers must master innovative product design, understand the benefits of adopting environmentally sustainable processes, invest in human and physical capital, leverage a range of financing options, realize international trade opportunities, and forecast future customer demands - even before the customer knows their needs. The manufacturers of the future will need to understand their brand and take advantage of all their assets - tangible and intangible - to distinguish themselves in the market.

Just to survive, manufacturing firms need to more quickly adopt new technologies, develop more innovative products, and constantly implement process innovations to improve their efficiency, productivity, and cost competitiveness.

While each of these improvements independently is foundational and necessary, when managed individually they do not provide long-term competitive advantage.

Importance of Manufacturing in the United States (continued)

Manufacturers must position themselves strategically to manage: continuous improvement, technology acceleration, supplier development, sustainability and workforce challenges and opportunities in concert to compete long term.

To be positioned not just for survival but for growth, manufacturers need to address five key critical areas in concert:

- Continuous Improvement,
- Technology Acceleration,
- Supplier Development,
- Sustainability and
- Workforce.

Both a framework and resources are needed to provide manufacturers the ability to address these critical areas and establish a defensible competitive advantage. **Manufacturers' management and integration of each of these interrelated, interdependent areas will determine their ability to protect and grow profits and compete in the long term.**

MEP as a Catalyst for Change

MEP Services Generate Significant Impacts

For FY2007 clients reported:

- New and retained sales of over \$10 billion
- More than \$1.4 billion in cost savings from improved processes and waste reduction
- Investments in new equipment and business operations totaling almost \$2.2 billion
- The creation and retention of 57,079 jobs

Data from an independent follow-up survey of clients completing projects with MEP Centers in FY2007.

Over its 20-year history, **MEP has helped thousands of companies reinvest in themselves through process improvement and business growth initiatives leading to more sales, new markets, and the adoption of technology to deliver new products and services.**

While headlines and news stories focus on the current impact of the difficult times faced by particular firms or industries, missed are the significant transformations achieved by others, and the potential opportunities and rewards that accompany these changes. Knowledge application is occurring faster and more efficiently as companies and other organizations (universities, laboratories, suppliers, and customers) become more interconnected. **To be successful manufacturers must have access to a wide range of resources** that will enable them to sell to new customers, compete in new markets, and develop new products, thus creating new, more profitable revenue streams.

MEP will continue to serve as a resource for manufacturing and innovation by expanding and leveraging resources to couple cost reduction strategies with profitable growth through new product development and market expansion. MEP has established itself as the connecting point for manufacturers, state and local governments, private sector resources, research organizations, and the federal government. To respond to this expanded need, **MEP will develop new networks and partnerships** that companies must have in order to realize an enduring competitive position in the global market. **MEP will promote the transition from reactive strategies to the proactive pursuit of increased profits and overall growth by helping manufacturers understand the value of their marketable assets in light of these drivers.**

MEP as a Catalyst for Change *(continued)*

MEP will facilitate the transformation of manufacturing into a more powerful engine of innovation providing manufacturers with a framework that addresses the drivers of business growth and competitiveness. Figure 1 depicts the five key areas in which MEP will strategically work with companies -focusing on the coordination across these areas to maximize success.



The Future of MEP



As the MEP program embarks on its next 20 years, the overarching **goal of the Next Generation MEP is to increase manufacturers' business growth and profitability.** This will require additional resources and the development of the networks and partnerships necessary to support a framework that integrates continuous improvement with strategies focused on new product development, market expansion, and workforce needs.

Continuous performance improvement strategies enhance productivity and free up capacity for growth. Technology acceleration, supplier development and sustainability strategies represent the next logical steps toward generating profit, creating jobs, and bolstering a long-term competitive position. Success requires that manufacturers develop proactive growth strategies and foster an entrepreneurial workforce. By encouraging firms to invest in themselves across all elements of their organization, MEP will work with partners throughout the network to provide the tools, services and connections focused on the five key areas of the framework: continuous improvement, technology acceleration, supplier development, sustainability, and workforce.

The Future of MEP (continued)



Continuous Improvement - Performance Improvement as a Foundation

A culture of continuous improvement is necessary to enhance productivity and free up the capacity that will provide manufacturers a stable foundation to pursue innovation and growth. **MEP centers around the country have a strong record and solid reputation for providing superior lean and quality services as well as other programs that target plant efficiencies.** MEP will continue to provide a unique approach to implementing the concepts of lean manufacturing across all aspects of the enterprise, scaled for smaller companies to readily adopt, and serving as a starting point to leverage the operational improvements into company-transforming strategies.

Technology Acceleration - Leveraging Technology to Stimulate Business Growth

Accelerating opportunities to leverage and adopt technology is the key to long-term business growth and productivity. MEP will serve as the connection between manufacturers and the technology opportunities and solutions they require to grow and compete in the global marketplace. MEP, in partnership with other organizations, will develop the tools and services to bring innovative and affordable new product and process improvement opportunities adapted to the needs of manufacturers. Additionally, MEP will make available a range of **product development and commercialization assistance services to help manufacturers rapidly move new product opportunities into production and out into the market.**

Supplier Development - Responding to Evolving Supply Chains

In the expanding global marketplace, the interdependence of Original Equipment Manufacturers (OEMs) and their supply chains will continue to evolve. As the OEMs focus on improving their competitive position through the development of an efficient supply base and the identification of innovative processes and products, it is increasingly important for the suppliers to understand industry needs, market drivers, as well as focus on adopting productivity improvements to remain competitive.

Through work with both OEMs and suppliers, MEP understands industry needs across all levels of the supply chain in terms of market space, integration requirements and best practices. MEP, with expanded resources and partnerships, **will systematically develop and deliver the national capacity, tools, and services needed to put suppliers in the best position to thrive in existing and future global supply chains.**

The Future of MEP (continued)



Sustainability - Embracing the Green Economy

Sustainability has become a key driver of economic growth as global demands for diminishing resources increase, renewable and alternative energy technology needs expand, and environmental concerns heighten. Whether it is simply a response to rising energy and resource costs or as a corporate growth strategy, sustainability seeks to balance economic, environmental, and societal challenges and opportunities.

MEP will help companies gain a competitive edge by reducing environmental costs and impact by developing new environmentally-focused materials, products and processes to gain entry into new markets. **Sustainable practices also increase manufacturing's contribution to the economy by helping companies embrace environmental goals profitably.** MEP will develop and expand strong and effective partnerships with government and industry to ensure sustainability is embraced at all levels of the economy - from the largest employers to the smallest suppliers to the workforce itself.

Workforce - Establishing and Enabling a Strong Workforce

A strong, engaged, and skilled workforce spanning all levels of the organization is a key element necessary for manufacturer's growth. Together, with partners at the federal, state, and local levels, **MEP has developed and delivered training and workforce assistance tailored to the unique needs of the smaller manufacturer.**

Recognizing that an efficient and effective manufacturing workforce of the future begins with a shift in corporate culture, MEP will expand partnerships and collaborations to develop and deliver the tools and services needed to foster the development of progressive managers and entrepreneurial CEOs, and continue to provide training and educational opportunities for the entire manufacturing operation.

Next Generation MEP: Approach and Tactics



Next Generation MEP represents a vision for expanding the capacity and capabilities of MEP and its nationwide network of centers and field offices to address the evolving needs of U.S.-based manufacturers. The framework outlined includes strategies that are interrelated, interdependent, and ambitious. **No single strategy or tactic alone will provide all the solutions needed by today's manufacturers.** The diverse, interrelated elements necessary for business growth will require MEP to depend on its proven ability to expand and foster partnerships at the National, regional, State and local levels to meet these needs.

Success will require that NIST MEP, the MEP system of Centers and all partner organizations work together to leverage knowledge and resources in developing and delivering the solutions, skills and tools to build manufacturers' competitive advantage. **Unique opportunities exist at all levels of government to provide the support and resources manufacturers need to innovate and grow.** Changing national priorities and economic uncertainties provide both challenges and opportunities and further emphasize the need to leverage resources and strengthen partnerships. MEP is moving forward with implementing the Next Generation MEP and the development of specific tactics and goals while recognizing the need to remain agile and flexible, respond to continuing change, and adapt to national, state, and local needs and opportunities. **MEP will work with policymakers at the Federal, State and City level to put in place the infrastructure and allocate resources that encourage manufacturers to take the bold steps required to face these challenges and accelerate the transformation of U.S. manufacturing.**