

**PROGRESS REPORT**

# **Western Massachusetts Manufacturing Partnership**



**June 2010**

# Acknowledgments

Commonwealth Corporation staff acknowledges the time and input received from members of the Regional Precision Manufacturing Partnership:

## Partners

Regional Employment Board of Hampden County, Inc.  
Western MA Chapter of the National Tooling and Machining Association  
Springfield Technical Community College  
Holyoke Community College  
Asnuntuck Community College  
University of Massachusetts Amherst  
Economic Development Council of Western Massachusetts  
World Institute for Strategic Economic Research  
Westfield Vocational Technical High School  
Chicopee Comprehensive High School  
Pathfinder Regional Vocational Technical High School  
Smith Vocational & Agricultural High School  
William J. Dean Technical High School  
Roger L. Putnam Vocational Technical High School  
Franklin County Technical School

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Western MA Chapter of the National Tooling and Machining Association

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## Manufacturing in Massachusetts

“The Massachusetts manufacturing sector is a major contributor to the economic health of the state, accounting for 10% of revenues . . . and allowing for significant expansions in exports over the last ten years. As the fourth largest sector in the state, manufacturing continues to be vital to Massachusetts’ knowledge and innovation economy, employing 9% of the workforce statewide and significantly more in certain regions. Manufacturing jobs in the state are higher paid than other sectors and wages have increased faster than wages statewide.

With its focus on high value-added products and innovation, the Massachusetts manufacturing sector employs proportionately more engineers, managers and computer occupations but fewer blue-collar workers than the manufacturing sector nation-wide. While the occupational distribution of the manufacturing workforce has been changing over time due to shifts in the industries that make up the manufacturing sector in Massachusetts, production occupations are still the largest occupational group, followed by administrative and office workers, engineers and managers.

Manufacturing has changed dramatically and close examination of trends in industries, regions and occupations is essential to understanding which skills and industries will be most important to the works and economy of the future. As the aging manufacturing workforce retires, younger workers are needed to ensure continued operations and transmission of vital knowledge. This sector is a pillar of the Massachusetts economy and continues to offer well-paid employment opportunities. Manufacturing is increasingly demanding a more educated and skilled workforce and it is important to continue to invest workforce development resources into the sector to address the needs of local manufacturers and upgrade the skills of their workers.”

*Quoted (in part) from the introduction to the Massachusetts Manufacturing Chartbook, produced by Commonwealth Corporation for the MA Executive Office of Labor and Workforce Development.*



## INTRODUCTION

The field of workforce development relies heavily on partnerships as the preferred structure for delivering workplace as well as community based programs. Both public and private funding sources are increasingly inclined to require collaborative approaches to programming. To ensure that workforce development programs have the best possible chance of providing businesses and workers with effective education and training, it would be helpful to have a deeper understanding of all aspects of a partnership experience, and a practical knowledge of the characteristics of successful partnership models.

Although the partnership examined here is unique in some aspects, the challenges faced during development and the dynamic interactions among key partners provide lessons that would benefit anyone interested in taking part in a collaborative program. Toward that end, this paper:

- Provides some historical background leading to the formation of the Regional Precision Manufacturing Partnership (RPMP) in Hampden County, Massachusetts;
- Describes the actions and behavior of key agents involved in the formation and coordination of this partnership; Provides information about the goals, objectives, benefits, and performance outcomes from the partnership's activities;
- Provides insight into the question of sustainability of the partnership, and
- Draws lessons from the experience of the RPMP and relates their efforts to selected models of collaboration, with implications for partnership-based workforce development.

## RESEARCH METHODOLOGY

Our findings and analyses are the result of a series of one-on-one interviews with ten employers and two education and training providers in December 2009 and January 2010. All of those interviewed are active members of the Regional Precision Manufacturing Partnership (RPMP).

Two of the active employer partners, including the former and current president of the Western Massachusetts chapter of the National Tooling and Machining Association (WMNTMA), were interviewed on two separate occasions. The partnership coordinator, an employee of the Regional Employment Board of Hampden County (the REB), was also interviewed on multiple occasions.

Eight partners, including two employer partners not involved in the interviews, completed a survey questionnaire about their experience as members of the Partnership, the responses to which were also incorporated into this paper's findings.



**Standing, Back Row:** Buck Upson, Pioneer Tool Supply; Craig Moore, Consultant; Larry A. Maier, President, Peerless Precision, Inc.; Robert G. Kispert, Director of Federal and University Programs, John Adams Innovation Institute; Jeffrey P. Hayden, V.P. for Business and Community Services, Holyoke Community College. **Standing, Front Row:** Eric D. Hagopian, President, Hoppe Tool; James D. Capistran, CUMIRP Director, UMASS; David M. Cruise, WCTF-PMTP Project Coordinator, REBHC; Allan W. Blair, President & CEO, Economic Development Council of Western MA; Susan M. Kasa, President, Boulevard Machine & Gear; Thomas Langevin, Applications Engineer, REBHC; **Seated:** Robert C. Holub, UMass Chancellor; Ed Leyden, President, Ben Franklin Design & Manufacturing, President, WMNTMA; John William Ward, President & CEO, REBHC; Gregory Bialecki, MA Secretary of Housing & Economic Development.

## BACKGROUND

### **The Context of the Emergence and Development of the Regional Precision Machining Partnership in Hampden County, MA**

For several generations, precision machining and machine tool industries have played a critical role in the economic life of western Massachusetts, especially the Pioneer Valley. This region has a long and storied economic history as the home of iconic manufacturing firms such as the Springfield Armory and Smith and Wesson. A large precision machining industry and machine tool cluster have long supported the aircraft and aerospace industries providing customized parts and tooling for firms such as United Technologies and Boeing Corporation.

The powerful combination of entrepreneurial zeal and a highly skilled labor force provided the means for hundreds of small and medium sized firms, many family-owned, to thrive and survive during countless economic booms and busts. Entire communities such as Springfield, Chicopee, Westfield, Agawam, and Holyoke bore the signs of a hallmark manufacturing landscape such as solid red brick factories and stoic multi-family homes.

Several years ago, however, a new narrative began to take hold; the all too familiar story of deindustrialization began to reshape the economic landscape as manufacturing declined, leaving many to ponder a future devoid of the once vibrant precision machining sector. However, the narrative of permanent decline may be premature.

The Pioneer Valley is now home to a resilient cluster of precision manufacturers, some thriving, some struggling and all facing a gauntlet of problems. During our interviews with business owners we learned about the following emerging challenges they are facing:

- The structure of the market for precision machined parts and components has been shifting as larger Original Equipment Manufacturers (OEM's) have left the area or gone out of business. Many local firms had long-standing relationships with these OEM's, either as primary or secondary suppliers, and the shifting market added uncertainty to the future of individual firms as traditional regional markets were threatened by globalization.

(continued)

- The need to invest in technology has been growing. Competition from other regions and/or other countries made it necessary for some firms to invest in new product/process technology and automation to improve products and to lower manufacturing costs.
- Persistent volatility in demand from the aircraft and aerospace industries, and an inability to diversify product markets beyond those industries has increased uncertainty for future sales and revenues.
- A shortage of skilled labor threatens to constrain growth opportunities. The aging skilled labor force exacerbates the shortage and contributes to an emerging crisis.
- An outdated and underfunded education and training infrastructure limits opportunities to address the growing skills shortage.
- The public image of manufacturing limits the number of young people considering this sector for training and employment.
- There is the perception that the political system has been largely unaware of or indifferent to the needs of small and medium sized manufacturing firms.
- Many business owners regard the public sector with suspicion, skepticism, or outright hostility and regard government as a major source of the industry's distress.
- Intense competition among the manufacturing firms had been making it difficult to generate shared strategies to address mutual challenges and growing risks to their profitability.

## From Recognition to Action: The Emergence of the Regional Precision Machining Partnership

As recently as 2005, our interviews indicate, regional manufacturing owners' efforts to manage the skills shortage on a firm-by-firm basis often meant enticing skilled employees away from one another. This method was clearly not going to address the longer-term, growing need for a new and reliable source of skilled labor, necessary to expand the manufacturing workforce.

### Addressing a Persistent Set of Challenges

By the year 2006 the employers we interviewed, along with a few public sector leaders, knew they had a serious problem and one they likely could not solve at the level of the individual firm. The absence of a reliable skills pipeline was a systems problem and individual small businesses are ill equipped to effect systems change.

The employers who would eventually form the backbone of the Regional Precision Machining Partnership were facing an intractable problem, and they came to recognize their interdependence as they sought a solution. The initial steps in the process toward collaboration were painful ones for these firms, as it was counter-intuitive to the competitive environment within which they were operating. However, they came to realize these problems if left unattended could put some employers at risk.

### Leadership/Vision

One business owner, Larry Maier, President of Peerless Precision Inc., Westfield MA, described the skilled worker pipeline as a 'burning platform' in an article in Business West Magazine<sup>1</sup>:

*"Western Massachusetts and the nation are now facing a critical shortage of skilled labor. Concerned groups include the Department of Defense, the Aerospace Industries Association, the National Defense Industrial Association and the National Tooling and Machining Association, and they are treating this as one of the most critical threats to our national security and our way of life.*

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<sup>1</sup> Business West.com *Manufacturing and Industry*, April 14<sup>th</sup>, 2008

*The problem covers the entire pipeline from highly skilled machinists who can operate the high-tech equipment utilized in today's manufacturing to degreed engineers. If we do not find and commit to a solution we will no longer be able to compete on the world stage, both economically and militarily."*

No single firm could address the systemic weaknesses underlying the skills shortage, and the industry itself seemed to lack the institutional capacity to seriously address the issue. Larry Maier played a key leadership role in highlighting the skills shortage and in articulating it in a manner that allowed others to understand the significance of the problem. By challenging himself and his peers in the industry to "find and commit to a solution," Mr. Maier convinced industry leaders and other business owners to rally behind him.

Other owners such as Eric Hagopian at Hoppe Tool, Ed Leyten at Ben Franklin Design and Manufacturing Co. and Jack Mitchell at Mitchell Machine, Inc. also saw a need to act in concert. In another article, this one written in 2009 entitled "Building Coalitions," Larry Maier, looking back over three years of work, describes the new regional philosophy and strategy<sup>2</sup>:

*"There is much dialogue about the shortage of skilled labor and people with Science, Technology, Engineering, and Math (STEM) educations. The solution is in the building of an industry-led coalition focused on realistic, achievable, and continuously improving goals and actions. We build the road one foot at a time with many substrates. The question for industry is: Can executives and senior management afford not to make time to solve the problem and lead the way to the solution?"*

*In western Massachusetts, we have been making time and leading. Our self-directed initiative started informally and without a plan or direction in the spring of 2005. It has been led by a group of owners of precision machining shops who faced a severe shortage of skilled labor, and had been surviving by pirating each other."*

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<sup>2</sup> *Manufacturing Engineering*, February 2009 Vol. 142 No. 2 published by the Society of Manufacturing Engineers

As a leader Mr. Maier challenged his peers - other business owners - to discard their traditional self-interested habits and embrace the need for a collective 'self' committed to working together. He subsequently described some of the early steps and successes of industry representatives in Western Massachusetts<sup>3</sup>. Here is how Mr. Maier framed the initial "value proposition" that would become the mission of the Partnership.

*"We did not start with an 'ask.' We started with a statement of a need for people to do unfilled high-paying jobs in a vital, dynamic, and growing industry. We educated. We attended roundtables held by two different Massachusetts governors, testified at hearings held by state legislators, and conducted roundtables between industry leaders and legislators. We talked to local mayors, school superintendents, principals, and guidance counselors. We placed industry people on advisory committees of every manufacturing technology program in the area (both high school and community college). We met with the Massachusetts Manufacturing Extension Partnership (MassMEP) and the Regional Employment Board (REB). And we met with our Congressional representatives and their aides. We accomplished this with PR campaigns designed to attract media attention to our need for people. None of this was done with paid lobbyists, consultants or marketing people. As owners of small businesses we did not have time to do any of this, but we could not afford not to."*

Mr. Maier's building of a coalition and his list of accomplishments show the potential for positive change when individuals and institutions come together around a common problem. These activities are described in more detail in a later section of this report.

## **Meaningful Employer Engagement**

Initial meetings between employers and public officials were an opportunity for dialogue with important stakeholders in order to clarify what they needed and what was possible to request from other stakeholders, by collectively establishing relationships with key public sector stakeholders. Business owners recognized the need to speak in and to the broader community with a collective voice, and set about to revive the dormant regional Western Massachusetts chapter of the National Tooling and Machining Association (WMNTMA), referred to here as "the Chapter". The determination to speak and act collectively would prove to be a critical and positive factor from both a public relations and public policy perspective. The Chapter launched a community awareness campaign along with a drive to reorganize the region's vocational education system.

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<sup>3</sup> *Manufacturing Engineering*, February 2009 Vol. 142 No. 2 published by the Society of Manufacturing Engineers

The reputation of the manufacturing sector had suffered greatly over the many years of perceived decline. The negative image of the industry also contributed to the skills shortage, as neither parents nor students considered manufacturing to be a viable career option. This resulted in a decline in enrollments for manufacturing programs at vocational high schools in the region. Members of the newly revived Chapter knew they had to change public perception before it could change public policy. The Chapter, acting in its capacity as the voice of manufacturing in the region, initiated what would turn out to be a successful community education and public relations campaign in an effort to make the case that the manufacturing sector was a viable and worthy career choice for talented young people.

In addition to negative perceptions about careers in manufacturing, the Chapter recognized problems within the vocational career education system. The region's vocational schools, reflecting both industry needs (in the 1980's) and public perception, had cut back on investments in machining programs, making this choice of study even less attractive and accessible. The Chapter thus confronted a combined downward cycle spiral of enrollment and investment. In years past the machining programs in local vocational high schools had enjoyed the support of local employers, often acting out of individual self-interest for the need for skilled workers for their own businesses.

As a result of such agreements between schools and individual local businesses, educational leaders and school officials were not used to thinking of manufacturing firms as representatives of a broader industry sector, nor were educators ever encouraged to think regionally or at a systems level. They were only addressing specific local skill needs. Consequently, as local manufacturing companies downsized, the vocational school response to local skill needs was naturally scaled down as well. It was the Chapter, in 2007, that identified the need to create a ***regional vocational and technical training system***, which became a central focus of the activities of the Regional Precision Manufacturing Partnership.

The new leadership of the Chapter not only worked successfully behind the scenes to effect system change, it also worked diligently to bring its story to the public via community forums, outreach and education campaigns, and very public meetings with local, regional, and state leaders in the government. The Chapter as an organization and its members benefited from the enhanced visibility of the manufacturing sector, resulting in the growth of the Chapter membership and their sales (see Table below, **Membership in the Western Massachusetts chapter of the National Tooling and Machining Association (WMNTMA)**,

Year	Number of Companies	Number of Employees	Estimated Gross Sales
2005	24	899	\$108 mil
2006	29	993	\$155mil
2007	33	1281	\$220mil
2008	39	1386	\$252mil
<b>Change 2005-2008</b>	<b>+15</b>	<b>+487 (54.2%)</b>	<b>+\$144mil (133%)</b>

Larry Maier and other employers were determined to re-define the identity of the Chapter from a social organization to an organization actively engaged with real industry problems, while simultaneously advancing and advocating for systemic solutions to those problems. This strategic shift may be one explanation for the increase in Chapter membership. Acting within the context of the RPMP, the Chapter became identified with a successful initiative to bring new resources to the industry, adding to its credibility as an organization. The Chapters’ pro-active approach in the community encouraged increased involvement in its activities, which in turn led to more influence in the political and economic spheres in the community. This helped garner additional resources to address industry-wide problems, and a positive cycle of participation and progress was set in motion.

The Regional Precision Manufacturing Partnership (RPMP), in its initial form in 2006, emerged at the same time the Chapter had re-invented itself as a regional industry association that could act independently to represent the needs of its members. Consequently there is an interactive dynamic between the RPMP and the Chapter.

The capacity to affect and influence public policy is in part the result of the success of the Chapter as an institutional actor working with other regional institutions such as the Regional Employment Board of Hampden County, to bring resources to the industry and effect systems change. Notably, the Chapter as an organization acted capably as an independent agent and collective voice of employers as it had both re-invented itself and created the capacity for local manufacturers to:

- ▶ Develop a clear mission statement accompanied by goals and objectives representative of the sector as a whole;
- ▶ Attract new members and resources;
- ▶ Articulate the interests, needs and concerns of the sector to the public and policy makers;
- ▶ Promote the overall economic health of the sector;
- ▶ Provide for leadership succession;
- ▶ Earn the respect of other regional institutions, and
- ▶ Effect local, regional, and state policies affecting the sector.

The emergent relationship between the Chapter and the RPMP suggests an interesting issue for further research: *Does the symmetry of this relationship, consisting primarily of two institutional stakeholder groups each representing multiple stakeholders and each possessing a strong independent identity and voice, present us with a model distinctive enough to warrant further research?*

## Resources

The parties involved with the Regional Precision Machining Partnership in Hampden County have demonstrated an ability to secure funding for important initiatives. The ability to engage successfully in fundraising is itself a demonstration of the organizational capacity of a public/private partnership. Partnerships also require social capital defined as the processes and information needed to coordinate the complex tasks inherent in such enterprises. Starting in 2006 and continuing in 2010 the Precision Manufacturing Partnership was able to raise enough funds to reach a critical mass of activity addressing the originally defined work force training needs. Below is a table identifying the sequence of grants received between 2006 and 2008:

Year	Grant	Purpose
Spring 2006	John Adams Technology Innovation Award \$150,000	Capacity building, research, and planning
Winter 2007	WCTF* Training Award \$400,000	Workforce development including training for unemployed individuals and incumbent workers
Spring 2008	John Adams Technology Innovation Award \$500,000	Further capacity building, business development, marketing and community awareness

\**Workforce Competitiveness Trust Fund, through Commonwealth Corporation*

The first joint action undertaken by the partnership (represented by the REB), with significant input from the “Chapter”, was an application for a John Adams Technology grant in the spring of 2006. Partnership Director David Cruise describes the importance of the grant this way:

*“The initial John Adams grant of \$150,000 allowed the REB to begin developing a working partnership between the precision machining companies led by the WMNTMA and the regional education and training institutions. The grant also positioned the partnership to implement the workforce development interventions for the incumbent and unemployed/underemployed individuals served by the [RPMP that was subsequently] funded by the Workforce Competitiveness Trust Fund (WCTF).”*

The John Adams grant from the Massachusetts Technology Collaborative’s John Adams Innovation Institute provided seed capital for research and new staff, a full time project coordinator, at the Hampden County Regional Employment Board. It is quite clear from our interviews that the project coordinator, David Cruise, hired in 2007, played a crucial role in the positive development of the Partnership. Our research uncovered a story of both monetary investments along with many invaluable investments of time and coordination, which taken together contributed to the success of the project. David Cruise, himself, performed a number of essential functions including; direct management of grant compliance including data gathering for evaluation purposes, grant writing, active facilitation of the partnership meetings including all record keeping, and internal communication and management of funder relations. David was also elected to the Board of the Chapter, a sensible move, but also an important symbolic gesture on the part of the employers acknowledging David’s contributions to the collective endeavor.

The research funded under this grant confirmed what business owners knew from experience - that the supply of skilled workers was not meeting the demand and that with time the problem would get worse if left unattended. Several business owners interviewed for this report mentioned surprise at what the research revealed about the scope of the problem. The research findings galvanized support among employers and spurred interest within the Chapter for further dialogue with public officials and the Regional Employment Board. From all accounts, it was significant that this first grant included funding for a staff person located at the Regional Employment Board. David Cruise, the person hired in this position, assumed a key role as coordinator for the partnership. According to survey and interview responses, the partnership benefited enormously from his leadership abilities as well as practical skills and abilities in strategic planning, facilitation and mediation and grant writing.

The early successes of the 2006 John Adams grant were followed by a second successful grant application in 2007, providing funds for workplace-based training. This second and much larger grant for the Precision Machining Training Project (PMTTP) with the **Hampden County Regional Employment Board as the lead partner** was secured from the Massachusetts Executive Office of Labor and Workforce Development's Workforce Competitiveness Trust Fund, administered by Commonwealth Corporation. It had the following goals:

Goal 1: To provide training in Machine Tool Technology to 40 unemployed/underemployed individuals.

Goal 2: To establish 40 training slots per year to provide skills enhancement to 60 incumbent workers, increasing the industry's capacity to penetrate highly specialized and complementary markets.

**Employer partners included:** TellTool, Hoppe Tool, WGI Inc, D&S Manufacturing/B&E Tool, Smith and Wesson, Savage Arms, Lenox, Poplar Hill Machine, and Peerless Precision. **Other partners** were Franklin/Hampshire Regional Employment Board, Western MA Chapter National Tooling & Machining Assoc., Springfield Technical Community College, Asnuntuck Community College, Greenfield Community College, MA Career Development Center, Westfield Vocational Technical High School, Pathfinders Regional Vocational Technical High School, Smith Vocational and Agricultural High School, Chicopee Comprehensive High School, and Roger L. Putnam Vocational Technical High School.

In addition to the two specific training goals listed above the project also aimed to create significant system changes including:

- ▶ Create true (industry) cluster development that will allow for cluster-wide innovation and expansion resulting in increased market share on the regional, national and international levels;
- ▶ Increase the industry's transformative capacity to penetrate specific markets in highly specialized and complementary markets including medical devices, alternative energy, communications manufacturing, as well as fabrication of advanced materials for nano-manufacturing;
- ▶ Develop companies' ability to quote on additional work, given that the increase in the quality and quantity of workers will provide the impetus for long-term investment decisions throughout the precision manufacturing industry in the Pioneer Valley Region;
- ▶ Herald the beginning of a new, collaborative approach to determining the best way to position member firms to align their current plan of operations, increase market share and generate sustainable growth in an innovation economy.

Under this second round of funding, each WCTF grantee was required to identify concrete ways businesses would be impacted as a result of successful training. The business impacts were identified as:

- ▶ Reduction in error, scrap and re-work;
- ▶ Modest increase in initial productivity and efficiency with incremental improvements as the new employees become more productive;
- ▶ Reduction in the lead time to set-up the equipment and controls for the short, highly engineered production runs that characterize the precision machining production flow;
- ▶ Reduction in new employee recruitment costs, and in particular the costs involved in initial employee orientation to company protocols and operational procedures;
- ▶ Increased ability to quote on new work to expand plant operation capacity & improve profit margins;
- ▶ Increased ability to identify new & complementary market niches for future penetration, and
- ▶ Reduction in over-the-shoulder training time to move entry level employees to productivity status

These goals for both training and business impact outcomes were ambitious, reflecting a growing confidence within the Partnership. Writing an article titled, “Building Coalitions,” for *Manufacturing Engineering* on February 10, 2009, Larry Maier took stock of the importance of the early partnership successes, many of which were made possible by the resources secured in 2006 and 2007:

1. In the school year ending June 2008, enrollment in manufacturing technology programs at 5 area vocational high schools had grown by 27% when compared to the previous school year. Enrollment went from 71% to 90% of capacity.
2. A sixth vocational high school resurrected a manufacturing technology program after terminating it six years earlier. In it’s second year (2008-2009 school year), there were 100 applicants for 16 ninth grade slots.
3. Two schools have been asked to increase their capacity for students to meet the demand by students and the needs of industry.
4. Springfield Technical Community College’s manufacturing technology program has grown from enrollment of 10 per year to 100, with 50% of the students still in their 20's.
5. Over 700 incumbent employees at area manufacturing companies have enrolled in free, voluntary evening courses designed to upgrade their skills.
6. Through the Mass state legislature, the Governor, and various state grant programs, over one million dollars has been awarded for pipeline awareness programs, as well as incumbent –workforce training.
7. Through local golf outings, bike rides, bond issues, and a federal earmark, more than one million dollars has been raised for manufacturing-equipment upgrades and purchases at local vocational high schools.
8. Through the (Society for Mechanical Engineers) SME Educational Foundation and Siemens Corp, over 14 million dollars in state of the art computer hardware and software was installed into the manufacturing technology department of one of the local vocational high schools.
9. Six regional vocational and technical high schools have largely eliminated historical and geographical service boundaries as most now work collaboratively to offer a regional manufacturing technology education and training and STEM system along with Springfield Technical Community College.
10. The Regional Employment Board, the WMNTMA Chapter, and other public economic development agencies have created a resilient network of partnerships supporting the continued growth of the precision machining sector in the pioneer Valley
11. The WMNTMA Chapter has nearly doubled its membership

This list of outcomes by Mr. Maier identifies benefits to the industry, including some of the outcomes anticipated by the WCTF training grant. There are also systems change outcomes that should be highlighted as Partnership achievements, most notably the successes associated with upgrades to the regions' vocational training schools. In particular, the \$14 million dollars in products and in-kind services offered by the Society of Manufacturing Engineers. Foundation and the Siemens Corporation are an example of how an effective partnership can leverage its social capital in concrete ways.

By the end of the second year of partnership activities, a clear maturation process was underway. Individual firms benefited from the sizeable investment in work-place training, allowing many firms to upgrade incumbent workers skills and the skills of entry-level employees. These investments in human capital allowed several partners to strengthen their competitive position during the worst recession in manufacturing in thirty years.

## **Motivation**

In addition to the leadership, private sector engagement, and development of resources evident in this particular partnership, another factor in their progress is that the key players involved in the launch phase of this partnership shared an urgent desire to succeed. In his February 2009 article in *Manufacturing Engineering*, Larry Maier describing his view of the "coalition," noted that success was the result of countless hours spent by all the partners together in meetings and public forums.

The parties were learning how to work together, building confidence in their collective abilities and building trust among the owners themselves and also between owners and public sector officials. One might assume that participants involved in a public/private partnership may want to avoid confronting difficult issues while perhaps also minimizing apparent conflicts on the theory that organizations need to strengthen relationships and build rapport during the "fragile" early stages of development. However, in the case of the members of the Regional Precision Machining Partnership, ambitious goals were set very early on and a great deal of work was done while the group simultaneously established a group rapport and a set of working principles ( see table below).

This level of commitment stems from highly motivated individuals willing to do the hard and mostly unheralded work of building a partnership. This level of personal and collective motivation sprang from both the recognition of powerful threats in the external business environment and the joint acknowledgment among business owners that old solutions were counter-productive to their success as members of the industry.

## Sustainability and Future Action

In today's uncertain business and political environment it is hard to predict the future of an organization such as the Regional Precision Manufacturing Partnership. Will the partners continue to find the leadership required to sustain an effort of this nature? Will these same partners continue to harvest new resources?

Evidence of sustainability is offered by Ed Leyden, current President of the WMNTMA Chapter. Below are excerpts from the Chapter's strategic plan, showing their principles and goals and offering us a glimpse into what lies ahead:

### WMNTMA Principles

1. Record growth in their present business has created a new-found confidence in the members' perception of their global competitiveness, and provided the impetus for long-term investment decisions.
2. In order to grow their business in an innovation economy [members] must develop new partnerships, embrace new technologies and business models, seek out new markets, and develop practical ways to insure the availability of a qualified workforce that can take them to the next level of excellence.
3. On-going dialogue and deliberation, transparency, partnering for solutions, sharing technologies and operational strategies, and cross-fertilization of ideas and operations will benefit individual member companies and the high technology precision manufacturing industry as a whole.

### WMNTMA Goals for 2009-2010

**Goal 1:** Increase industry wide awareness of the Pioneer Valley Region as an innovative and agile high technology precision manufacturing region.

**Goal 2:** Strengthen cluster development and increase business competitiveness.

**Goal 3:** Build a well-educated technologically skilled workforce.

## Goals of the Manufacturing Alliance

- Memorandum of Agreement among the Precision Manufacturing Companies and Educational Institutions
- Marketing Program with the Economic Development Council of Western Massachusetts
- Hiring Technology Innovation and Applications Engineer
- Market Opportunities Forums
- Technology Innovation Forums
- Technology Transfer Pilot with UMass –WMNTMA
- Certificate Program in Mechanical Engineering Technology at Springfield Technical Community College
- Feasibility Study on Establishment of Center for Advanced Precision Manufacturing Technology

An interesting and important shift appears to be underway as the Partnership evolves. During the first four years of the Partnership, its initial focus was on workforce development. Now the partners are moving into other areas such as business development, innovation and technology development. This maturation of the Partnership suggests the partners have gained confidence and trust in their collective enterprise; the employer partners have obviously recognized the value of collective action and shared costs and have committed to a cooperative and collaborative effort to grow the sector.

## Summary of Partnership Elements

### **Coming together: Problem, Urgency and Shared Goals**

Precision machining business leaders came together around industry challenges and reached an early consensus about a mutually defined and broad based problem: the severity and importance of the skills shortage. There was acknowledgment that the impact of the problem would be severe and far reaching if left unaddressed. It could mean the decline of competitiveness and the very survival of the industry in western Massachusetts. The partners realized the urgency of the problem, rallied around the issue, and were thus able to engage other partners such as the REB, STCC and vocational schools.

A key factor in the formation/coming together of the partnership was development of a shared vision that has allowed employers to think on a bigger scale than their individual businesses as they have sought. A willingness to think big plays a role here. The partners want to make big changes and act together on projects that are intended to be transformative. Partners developed the ability to see possibilities for the entire sector, not just individual firms. Conversations with a group of the partners typically address a current issue or problem, or action steps required today. At this point, the partners seem to assume they will be working together years hence. Perhaps their shared vision of a truly world-class advanced manufacturing sector in the Pioneer Valley motivates them through the difficult and time consuming day-to-day work that sustains real progress.

### **Partnership Development: Resources, Process, Relationships, and Results**

Through the acquisition of grants and employer contributions, the partnership also garnered sufficient resources early on to reach a critical mass of activities. Over time, the partnership has generated a consistent stream of resources allowing for meaningful training opportunities that have made a difference at the level of each firm, providing early successes. The resources also provided critical staff support for planning, coordination, project management and problem solving and publicity.

Building trust through relationships was a key factor in the partnership's ability to grow and sustain itself. The level of trust among partners may also be a key factor in their ability to bring about the systems change they have accomplished, speaking with a united voice and vision.

The capacity and willingness to deal with conflict and decision-making has also been essential to development of the partnership. Most partners are business owners used to running a business and making key decisions - often unilaterally. Joint action projects and collective decision making are not standard operating procedure outside of the boundaries of the partnership. And yet many of the strongest personalities here recognized the importance of listening to others ideas and opinions. Responses to surveys and interviews indicate that these partners have a good deal of respect for each other and most will support decisions of the group even if they have individual misgivings.

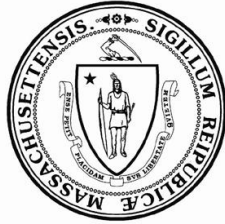
A third element of the partnership's development was its attention to results in terms of training and systems change. The ability to focus on and see visible results has reinforced the value of partners' involvement in the partnership and promoted its sustainability.

## **Leadership**

There was committed and consistent leadership of the partnership from both the private and public sector. The partnership coordinator, working as an employee of the REB, has successfully crafted a role that entails both leadership –holding the partnership together - and neutral facilitation. While the public sector, particularly the REB, played a lead role as convener and facilitator, the agenda and activities of the Partnership have been the responsibility of business owners. A few champions emerged from within the industry providing the necessary vision, direction, and inspiration sufficient to motivate collective action. The leaders playing key roles have remained.

## **Coordination**

As a necessary complement to leadership in terms of ideas and strategy, the coordination role played the REB staff has been key to holding the partnership together through periodic meetings, regular communications, and the effective development and management of resources. The project coordinator has also played a key role in regular outreach, especially to the public sector, and in identifying resource opportunities and addressing them through applications and proposals. The coordinator meets regularly with the leaders of the WMNTMA Chapter, communicating almost daily. Strong working relationships were established early on, creating a type of social capital within the partnership that can be called up to stimulate even more creative problem solving. The culture of manufacturing, and the culture of small business owners, relies heavily on face-to-face communication. This style is time consuming but has paid dividends within this partnership.



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