

Manufacturing ENGINEERING

Manufacturing Engineering magazine delivers information you need to remain a leader, whether you are a job shop owner or other manufacturing professional and whether you work for a small, specialized shop, mid-sized supplier or large OEM.

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Manufacturing ENGINEERING

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Focus on the Workforce

Building Coalitions

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 industry-led coalitions focused on realistic, achievable, 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 machine shops who faced a severe shortage of skilled labor, and had been surviving by pirating each other. A partial list of the results of the efforts led by this group (all members of the Western Massachusetts chapter of the National Tooling and Machining Association or WMNTMA) is as follows:

- In the school year ending June 2008, enrollment in Manufacturing Technology programs at five area vocational high schools had grown by 27% when compared to the previous school year. Enrollment went from 71% to 90% of



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capacity.

- A sixth vocational high school resurrected a manufacturing tech program after terminating it six years earlier. In its second year (2008–2009 school year), there were 100 applicants for 16 ninth-grade slots.
- Two schools have been asked to increase their capacity for students to meet the demand by students and the needs of industry.
- An area community college's manufacturing technology program has grown from enrollment of 10 per year to 100, with 50% of the students still in their 20s.
- Over 700 incumbent employees at area manufacturing companies have enrolled in free, voluntary evening courses designed to upgrade their skills.
- Through the Massachusetts state legislature, the governor, and various state grant programs, over \$1 million has been awarded for pipeline awareness programs, as well as incumbent-workforce training.
- Through local golf outings, bike rides, bond issues, and a federal earmark, more than \$1 million has been raised for manufacturing-equipment upgrades and purchases at local vocational high schools.
- Through the SME Educational Foundation and Siemens Corp., over \$14 million in state-of-the-art computer hardware and software was installed into the manufacturing technology department of one of the local vocational high schools.

All this and more in 3 ½ years of taking action, one small step at a time.

In the words of Clem Fucci, manufacturing technology department chair at Westfield Vocational High School: "The coalition between the WMNTMA and local voc-tech high schools has created not only a renewed awareness of both the importance of manufacturing and increased funding but, more importantly, a renewed spirit and excitement for educators."

No one group could have made this happen by itself. The problem, the rewards, and the needs had to be defined by the customer, which in this case was the group of machine shop owners led by the WMNTMA. In business, we only succeed by being customer-driven. Relative to STEM and highly skilled labor, industry is the customer. We cannot afford to let government, educators, and other groups define "our problem" through their eyes. We cannot wait for others to solve our problems. We need to commit, lead, and act.

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, 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 superintendants, principals, and guidance counselors. We placed industry people on the steering/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 accompanied this with PR campaigns designed to attract media attention to our need for people. None of this was done by paid lobbyists, consultants, or marketing people. As owners of small companies we did not have time to do any of this, but we could not afford not to.

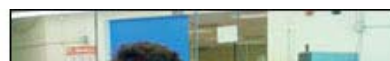
After our group received \$150,000 from the state legislature for incumbentworkforce training, Massachusetts State Senator Mike Knapik (sponsor of the line item) was asked why the request by WMNTMA members had succeeded this time, and failed on all previous occasions. His answer, "this was the first time I thought you were serious." He saw passion, commitment, involvement, and leadership.

Some things cannot be and should not be delegated.

As a result of the initial "awareness campaign," a core coalition was formed between the industry leaders from the WMNTMA and the REB. The broader coalition includes elected state and local officials, educators in the public school systems and community colleges, the MassMEP, the National Defense Industrial Association (NDIA), The National Center for Defense Manufacturing and Machining (NCDMM), the SME Education Foundation (SME-EF), the Western MA Economic Development Council, and many others.

Programs and courses of actions are generally identified by collaborative efforts between the Regional Employment Board and the WMNTMA leadership. Then different working groups and partnerships are created as a function of each specific initiative. There are no "standing committees." Everything is project and function driven. It is a "virtual team" in every sense.

As a way of clarifying larger-scale interactions, commitments, and directions between the various disparate groups, David Cruise of the REB has circulated



memorandums of understanding for signing by involved parties. These act to ensure clarity of vision, direction, and commitment.

A marketing professor at the Darden School at the University of Virginia (Charlottesville) once said, "Marketing is Everything." In this case, we have used the communication of success to breed success. Through media coverage, e-mails sharing stories, individual outreaches, participation in advisory panels, and more, the local players have created an awareness of the vitality, successes, and needs of the industry and the opportunities for collaboration that are available.

A great example relates to the involvement of the NDIA and the SME Education Foundation, two national groups that have been key to obtaining Siemens software and new computers at Westfield Vocational High School. Lieutenant General (retired) Larry Farrell, president of the NDIA, has had members of his staff participate as invited speakers at several local events. On a regular basis, he has been sent information relating to STEM workforce successes. As a result, when Bart Aslin, Director of the SME EDF, contacted him, he referred Bart to me. Bart sent me an e-mail announcing an initiative by Siemens. I sent this to David Cruise of the REB, and asked that it be circulated to our education partners. As a result, Westfield Vocational High School became the only high school in the country to be awarded the software, which was worth \$14 million. When Bart found that they did not have computers capable of running the new software, he provided almost \$50,000 in funding for the acquisition of new computers. This was publicized in a ceremony at the high school attended by Massachusetts' lieutenant governor, the Westfield mayor, the school superintendant, and others. The story was covered by all local media (print and TV). Success breeds success.

And let's not forget reaching out to kids by communicating with them. Industry has not focused on curriculum, it has focused on working with the schools to excite students about STEM careers. This has been accomplished by having a mobile training unit run by the MassMEP tour local middle schools. The unit has 12 computers, a minilathe and a minimill. It has been used to provide a 45-min hands-on introduction to today's manufacturing environment. Over 3000 eighth graders have toured the bus in two years. Many students have said that this was their first exposure to manufacturing.

This has been combined with plant tours by over 500 middle and high school students, as well as tours of SME's EASTEC Expo (held in West Springfield, MA) by almost 300 students (funded by SME EDF). These initiatives have involved collaborative efforts and coordination between the WMNTMA, REB, MassMEP, SME, and various school administrators throughout the region. Much of this has been coordinated through the Regional Employment Board.

If we do not educate our youth about career opportunities where STEM skills are used, how can we expect them to be excited and willing to learn in STEM classes? We need to show them their future opportunities, so they have a reason to learn today.

We in US industry are on a sinking ship relative to the need for highly skilled labor and STEM-educated professionals. We cannot afford to sit and complain about the lack of motivation in today's youth, or shortcomings in the education system. We need to treat the situation as a business problem, and solve it as such. We need to lead from the top of our largest and smallest companies. And the winning strategy is:

- Educate and excite our youth by giving them a view of their future in STEM careers.
- Join K-12 school advisory panels to give industry a voice.
- Embrace the media and invite them to be part of the solution. Change the dialog from unemployment to unfilled jobs.
- Reach out to elected officials, especially at state and local levels. Let them share in successes.
- Develop key partnerships with other organizations that can support the mission.

Above all, we need to show the same passion, dedication, and leadership to solving the workforce pipeline problem that we show in running our companies every day.