Response to RFI

For the Manufacturing Technology Acceleration Centers

Monday, July 15, 2013

1) What are the specific types of technology transition and commercialization tools and services that should be provided by M-TACs? Emphasis is on the alignment of these tools and services with the most pressing needs of small and mid-sized U.S. manufacturers.
   a) MEP's have a high degree of access to SME's at the right level (C-level). They also have the ability to form collaboratives. Collaboratives have inherent ability to reduce the cost per employer while delivering high quality services as well as promote interactions and "benchmarking among the individuals within the collaborative.
   b) Specific Tools and Services_
      i) Comprehensive Enterprise readiness assessments
      ii) Active resource center of qualified, experienced consultants with proven commercialization expertise
      iii) Access to research & technology centers _ Universities and private enterprise
      iv) Training and Technology skills development
2) MEP's have access to third party resources that represent ability to deliver specific tools and services tailored to the individual needs without delays associated with development time to "home grow"…..(Give examples). The proposed M-TACs would plug into this existing delivery mechanism.
   a) Mass MEP has diligently worked at developing meaningful partnerships for this purpose. Other state and local agencies, Chambers of Commerce, Banks, Venture Capital firms, Industry Associations, Economic Development Councils, etc. The MassMEP technology Acceleration initiative is done in conjunction with UMass. MEP contracts with UMass to supply a Technology Acceleration Liaison who is a University employee for example. These are all part of the current delivery mechanisms focused first on client needs and then locating and providing essential resources to address the needs.
   b) MEP has established relationships with technology rich enterprises looking to assist other SME's in the emphasis of Technology Diffusion, product development, and supply chain integration services as a basic service of the program in addition to providing technical and business assistance.
3) How would M-TAC services complement the services currently offered by MEP Centers?
   a) MEP's are always looking to expand their deliverables to their existing client base as well as develop new clients. For many existing clients the success of the ongoing work of improving competitiveness has left clients asking for and MEP's seeking the answer to the question, "What's next?" The M-TACs hold the promise of answering that question for both stakeholders. There have been tremendous individual efforts among individual MEPs to address this issue, but little if any opportunity to compare notes and best practices and develop a more unified approach. M-TACs could provide much needed benchmarking between and among MEPs.
4) What role should future M-TACs play with respect to supply chain needs? How should OEMs participate? How can industry associations, professional societies, and other appropriate national organizations participate?

a) At Mass MEP, we have already found a strong desire among larger manufacturers to do business locally with SME's. Being able to translate the complex requirements of technology driven projects in a way that an SME both understands, has the needed technology and can be upgraded to meet the Large company requirements is far more likely to be accomplished by the M-TAC/MEP combination. The smaller SME's often require more than just aces to new technology. They need ISO or other certifications, compatible information systems, upgraded quality systems and Lean elements that focus on on-time delivery, reliability, etc.
b) Mass MEP has invested in developing partnership relationships with associations (New England Nanotechnology Manufacturer's Association for example), Professional Societies such as National Machine Tool Association) as well as financial institutions in order to provide a wide range of solution based resources to SME's. Bridging the gap between the larger OEM's and the SME's becomes a case by case situation. The more arrows in the quiver, the greater likelihood of success. MTACs will provide a critical arrow.

5) Is there a particular long-term scalable and financially sustainable business model that should be implemented by future M-TACs that will enable small and mid-sized U.S. manufacturers to effectively access and benefit from the technology transition and commercialization assistance and other resources they need?
   a) This is an interesting question that requires an understanding of the current "Technology Transfer" general process and its inherent weaknesses as well as studying the exceptional processes and their reason for success.
   b) In a typical University Process, patent applications are written broadly and the university wants to hold on to all rights in perpetuity. There is no incentive for an SME to adopt a technology that can easily show up at a competitor. CVIP departments are generally rigid in their demands and require long term royalty payments at a very high rate. In addition the legal processes are tortuous and not conducive to any SME timeframe nor do they want to add legal costs that accrue from scrutinizing every word of every sentence.
   c) To the extent possible, a "Pay it Forward" approach is best for all concerned, but negative cash flow needs to be prepared for and offset over time. Recently in Oregon a proposal was approved that would allow Oregonian students to attend college tuition free with no loans in exchange for paying 3% of their income for 20 or so years. The Pay It Forward concept was originated by the Economic Opportunity Institute, a nonprofit policy group in Seattle, and is based in part on a model used in Australia. This type of thinking could be applied to the MTAC concept as part of a mixed model.

6) Because of the programmatic connection to the NIST MEP Program, M-TACs may require cost share. Are there cost share models for future M-TACs that promote scale up to reach nationally dispersed clusters of small and mid-sized manufacturers? If so, what are those models, and why might they be successful?
   a) We all know that an SME has to have some "skin in the game". At the same time "Pay it forward" approach makes technology more accessible. Therefore a balanced approach is called for. Once again this requires expert knowledge as to what is appropriate and what SMEs are capable of providing (yet another argument for regional experts). There will likely be other stake holders (Universities, Partners, Venture Capital groups, etc.). While there needs to be some flexibility around individual circumstances it is critical that the

MEPs communicate among each other in order not to create too wide a disparity from MEP to MEP or region to region.

b) In the cases where larger OEMs are looking to promote local sourcing (This is happening frequently give political unrest in the world and the fed policy to weaken the currency and the resurgence of U.S. based energy supplies) the OEMs are a logical underwriting source to cover some of the costs. This can be in the form of cash in exchange for favorable supply terms or exclusive supply arrangements for example.

c) IN any event any model needs to have both components of upfront costs and residual income to stake holders.

d) Collaborative approaches where multiple SME's participate in programs that enable transition and are common to all participants offer a cost effective means for cost reductions for access to otherwise unattainable opportunities.

7) The generation of intellectual property is possible, and even likely as a result of M-TAC operations. What types of intellectual property arrangements and management constructs would promote active engagement of industry in these pilots, especially among small and mid-sized U.S. manufacturers that would be supportive of the business model? As appropriate, please include a set of potential options, and please explain your responses.

a) We have used a model with some success. Of course it depends on the source of the IP. Assuming that it comes from a University, There needs to be clear guidelines. Often times Universities write patent applications very broadly to cover as much market space as possible and then want to retain all rights in all spaces. We have been able to grant "narrow slices" to manufacturers and still retain the rights to all other applications. This gives incentives to the SME while keeping future options open for alternative applications. This has sometimes been difficult as university CVIP offices have carved out much of that turf. Often these arrangements are largely based on % of future sales being the overriding income source. This also puts this type of arrangement within reach of small and medium sized SMEs. There is sometimes an upfront cost to prepare samples, transfer the technology or provide testing and certifications. To the extent possible this should be borne by the SME directly. To the extent this is not possible, it should be reflected in the ongoing sales agreement either extending the life of or the % of sales paid.

8) How should an M-TAC's performance and impact be evaluated? What are appropriate measures of success for future M-TACs? Please explain your response including the value of the performance measure to business growth. Show citation box

a) The one true performance measure that relates to the economic needs of the country is "Number of Jobs Created". Sales growth is an indicator. $'s in to the MCAT is another trailing indicator. $'s into the IP owner also a trailing indicator. The NIST survey can easily be used as a more current indicator, albeit trailing to some extent.

9) Are there any other critical issues that NIST MEP should consider in its strategic planning for future M-TAC investments that are not covered by the first four questions? If so, please address those issues here and explain your response.

a) Given the nature of SMEs, there will likely be a time lag before the program can self-sustain (I assume that $'s paid to IP owners will be considered as part of the measured returns) There needs to be a value assigned to Job created (That must be the main goal)

b) Don't look for $'S in $'s out since the $'s out will not necessarily go to the MTAC.

c) There will be greater than expenses involved in the regional approach as travel costs will be higher. The ability to support true experts regionally offset these costs
d) Performance driven measures should determine the tenure of the "experts", but also promote the sharing of ideas and successes. This sharing model is not ubiquitous in current MEP activities although it is far less necessary.
e) The choice of which expert where is likely to cause some dissent among regional SMEs, since geographic proximity and personal favorites can be divisive rather than collaborative.

Submitted,

A. Michael Wilson

With respect to the M-TAC initiative it will be critical to focus on technical training and workforce development needs. The supply chain will certainly need guidance and assistance as they will be tasked to conform to new and rapidly evolving standards, and processes that will result.

Sincerely,
Ted Bauer
Manager of Workforce Development Programs
MassMEP

In consideration when establishing performance impact assessments, there should be consideration for the allowance of time when measuring the efficacy of the NIST investment.
Our center's past and current experience has shown that it takes an inordinate amount of time to complete the legal aspects of Intellectual Property transactions, especially when such transactions involve a University.
The legal aspects of commercialization for both existing and emerging product and process technologies can often require lengthy negotiations that would require a longer horizon for an effective economic survey impact.

Regards,

Jack Healy
Director
MassMEP