

Request for Information to Inform the Creation of Potential New Manufacturing Technology Acceleration Centers (M-TACs)

1. What are the specific types of technology transition and commercialization tools and services that should be provided by M-TACs? Emphasis is on alignment of these tools and services with the most pressing needs of small and mid-sized U.S. manufacturers.

Most small and mid-sized U.S. manufacturers don't have the resources for research and development. Therefore, they must rely on expertise housed at universities or technical schools. We have witnessed success stories of connecting manufacturers with specific needs with a university that can meet the specific need. Having established a consortium of universities throughout the state as partners of the MEP has made this possible.

The creation of a centralized web site listing all the technology transition and commercialization tools available to manufacturers in the state could help manufacturers match their technology and commercialization needs with capabilities to meet their needs. The MEP could thereby serve as a clearinghouse of services available throughout the state for manufacturers to tap into. This network could be broadened to the national level if the services are not available within the state. Universities also have expertise in mechatronics related to advanced manufacturing and have formed a consortium on their own to train the future manufacturing leaders. Without a workforce trained in advanced manufacturing, manufacturers will continue to struggle with the implementation of new technologies. There would need to be a network of workforce training providers throughout the state. Again, these services could be listed on the central web site for manufacturers to utilize. There could be a one stop shop for manufacturers to go to for services to meet their specific needs. Community and Technical colleges could also play a large role in this effort. Generally they are located throughout the state and could meet the needs of manufacturers on a geographic basis. Again, all of this builds on already existing infrastructure. Through the Kentucky Association of Manufacturers there is access to the National Association of Manufacturers endorsed manufacturing skills certification system to assure quality training in technologies for advanced manufacturing.

In addition, the MEP has a robust Supplier Scouting process in place as well as active Technology Scouting and TDMI scouting assistance for manufacturers. These should be heavily utilized by the new M-TACs.

- a. How would M-TAC services complement the services currently offered by MEP Centers? Our MEP Center offers Innovation Engineering to manufacturers, a service that helps them make informed decisions on which innovations to move forward with and how. The university and economic development partners are helping to connect manufacturers with needs to the appropriate service providers. The universities are helping by providing prototyping services and other research and

product development services. Higher education partners, particularly community and technical colleges, are providing workforce training tailored to the needs of the manufacturer. Through networking with our economic development partners, we are trying to develop a clearinghouse of information regarding existing services for manufacturers. The M-TACs could help accomplish this difficult task.

2. 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?
The first step to addressing supply chain needs is to develop a list of those needs. In that OEM's are at the top of the food chain, placing demands on the system for supplying their needs, it makes sense for them to help develop this list with the assistance of the M-TACs. Once this list from OEMs is established, then lists of supply chain needs of their suppliers downstream should be developed. The M-TACs can connect these needs with statewide providers first, and if not successful, use national resources available through the MEP, whether other MEP Centers or such services as Supplier Scouting. Again, the M-TACs should take advantage of the MEP Supplier Scouting, Technology Scouting, and TDMI.

3. 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 needed.
One model could be the fees paid to university partners for their assistance in meeting technological and commercialization challenges with a finders fee going to the state MEP. U.S. small to mid-sized manufacturers cannot carry the overhead associated with a research and development team. Therefore, by tapping into an available existing resource on an as needed basis, they should be able to afford the temporary help they require on specific projects. With a statewide network of university partners, a wide variety of technical assistance is available at an affordable price yet help sustain the cost to universities and the MEP. The same type of model would apply for workforce training programs throughout the state. In addition, there are state financial resources to help defray the cost to manufacturers for this training, making it cost effective.
 - a. Because of the programmatic connection to the NIST MEP Program, M-TACs may require cost share. Are the cost share models for future M-TACs that promote scale up to reach nationally dispersed clusters of small to mid-sized manufacturers? If so, what are those models, and why might they be successful? Given the hard economic times, I am not aware of any

cost share models. It would take a visionary commitment from the state to make this happen.

- b. 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.

Having worked with a number of companies in developing technologies, the number one reservation they have in working with universities and other entities is claims to intellectual property that are onerous. In fact, intellectual property often does not lead to riches. It is better to enhance deal flow to improve the chances of finding one product that does reach the market and perform. Many universities choke product development trying to recoup money up front. It is better to develop contracts with clear delineation of IP, but limit any claims to financial rewards up front. Contracts could stipulate that a certain percentage of gross or net profits from the development of a product that involved outside help over a certain dollar limit (eg., \$1M) go to the outside service provider. A certain one-time small share of this payment might go to the MEP for referral. In this system, there is no obligation of the manufacturer to pay universities (or other providers) beyond the fee for service contract paid to help develop the product. By mutual agreement the service provider and manufacturer can develop a contract up front regarding the equity stake should the product become highly successful.

4. How should an M-TAC's performance and impact be evaluated? What are the appropriate measures for future M-TACs? Please explain your response including the value of the performance measure to business growth.
The performance metrics used to evaluate MEP's should apply as well to M-TACs. The bottom line is to enhance manufacturing growth, profitability, quality and job creation. These goals are consistent with the NIST MEPs and should be evaluated likewise. There might be an additional metric of partner involvement and their impact in that the goal is to broaden the impact of the NIST MEP. This cannot be done without a wider engagement of partners.
5. 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. Not at this time.

Submitted by AKA MEP, Kentucky
Blaine Ferrell