



To whom it may concern,

This letter is in response to the RFI issued by NIST on 12/14/2016 in regards to an Opportunity of Funding in 2017.

1. As I have travelled the country speaking to small medium and large Manufacturers (and MEP's) there seems to be a few common themes and dangers that permeate the manufacturing community (all are short term threats that may lead to collapse if not confronted head on).
 - There is a severe lack of understanding of the pace of exponential change. Many SMM have been located in smaller communities and while this has provided an ability to be sheltered from some of the effects of globalization, advancements in technology and international competition, Leadership at these companies seem unable to grasp the concepts of accelerated and exponential growth. This leaves them open for disruption. While many see the threat of exponential technology as a far off (10-20 year timeline) problem, they lack the understanding that this will happen in a matter of years and not decades.
 - There is also a lack of awareness of the future and technology in general. Most C.E.Os. have no idea in the changes that are on the horizon (or that have already happened) and continue to be stuck in a cycle of "demanding what they know". They demand Workforce Development Groups, Community Colleges and Trade Schools train a workforce for the past thinking they are preparing for the future rather than embrace Industry 4.0 and Exponential Thought.
 - In addition, those that do understand the message of change, forget or get caught up in the minutia of running their business very quickly. Many hear the message and accept it but if they are not continually confronted with it, they let it get pushed to the back of their mind.
 - They are unaware of how Global issues and movements affect their business and therefore are unprepared to adapt.

(2) What advanced manufacturing technologies are and/or will be needed by small U.S. manufacturers for the companies to be competitive and grow in the global marketplace in the near-term (1 to 2 years), mid- term (3 to 5 years) and/or long-term (more than 5 years)?

- Robotics
- Artificial Intelligence and Machine Learning
- Industrial IoT
- Additive Manufacturing



- Drone technology
- Autonomous Vehicles
- Exoskeleton Technology to Augment an aging Workforce
- Virtual and Augmented Reality
- Collaborative Robots to Augment an aging Workforce

2.(c) I have found the most effective way to communicate with small U.S. manufacturers is through in person presentations, presentations to leadership and workshops. Presentations that include other members of the community (outside of manufacturers, - i.e.. Mayors, Workforce leaders, etc) have proven particularly effective. While Manufacturers may be unaware of the changes, other members of the community they trust are not. Presenting to a mixed group has helped to strengthen the message because the ideas are validated by people they trust within the community. In addition, because not everyone is from Manufacturing, it prevents them from falling into “group think”.

(5) As a new administration takes control there are a number of challenges and opportunities on the horizon. Manufacturing in the United States has not had a consistent message or plan since World War 2, and while this election has shown a pride in Manufacturing again, there is no cohesive plan or call to action among the Manufacturing communities across the United States.

As the MEP moves into the future, the opportunity to be the uniting group for SMM across the US is within their grasp. However, without a clear and concise message and plan, the opportunity may be lost. Viewing the future through the lens of this past election it is clear that a strong Nationalistic Message with an Equally Nationalistic call to action is necessary to get buy in from not only the Administration but also the citizens that got their candidate elected. The promise of growth, Robotics and Industry 4.0 will not be enough to move these SMM's into action. Clearly, this group was moved by more than numbers, technological change or promises but rather by a sense of Patriotism, Pride and Courage. If the MEP is to move the manufacturing sector into the future the reason must be deeper than increased productivity, replacing workers and more efficiency. A message that ties the past to the future. As I have travelled the nation I have not come across a more patriotic and hard working group than Manufacturers. If the MEP is to capitalize on the forward momentum created by President Trump while simultaneously fitting into the “Make America Great Again” message it must reach deeper than just

technology, supply chains and efficiency and tap into the pride and sense of purpose within the Manufacturing community at large.

All the best,



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CEO