

HOW DOES THE U.S. HELP CURRENT EXPORTERS INNOVATE TO REMAIN COMPETITIVE AND INCREASE THE POOL OF *THRESHOLD* COMPANIES WITH DIFFERENTIATED, EXPORTABLE PRODUCTS?

Excerpted from: ON THE THRESHOLD: REFOCUSING U.S. EXPORT ASSISTANCE STRATEGY FOR MANUFACTURERS; Stone & Associates June 2013

The Economic Development Administration (EDA) calls innovation, “the key to new and better jobs, a resilient economy, and global competitiveness.”⁶⁵ Many studies have confirmed the two-way link between innovation and trade. As we stated in Section IV, differentiation confers competitive advantage, which allows companies to be *successful* exporters, and engagement in global markets spurs innovation. Given this linkage, it is clear that the export assistance world should:

1. Support the expansion of innovation programs that help established manufacturers to develop new products, processes, and technologies, enabling them to become or remain differentiated in global markets.
2. Strategically connect the export assistance world to the innovation ecosystem, for both
 - a. Established manufacturers
 - b. Startups

Innovation = Exports: The U.S. Needs to Support and Expand Innovation Programs That Help Established Manufacturers to Develop New Products, Processes, and Technologies, Enabling Them to Be Differentiated in Global Markets

One of the best ways to grow exports is to help established manufacturers develop (or continue to develop) unique or superior products, services, and capabilities, and to help them access technology to develop products for global markets. This enables these companies to remain competitive in global markets and creates a pool of new *threshold* companies with high potential export products.

What We Need To Do Differently The U.S. needs to support the expansion of programs that can help individual established companies differentiate themselves. The MEP program offers a number of tools and services that help manufacturers to accelerate innovation. Two particular MEP services that assist SMMs to differentiate themselves are Innovation Engineering and Lean Product Development. (See Chart 15) Programs such as these can help companies become more effective and efficient at developing new products, which increases their international potential.

The U.S. also needs to encourage connections between current exporters and sources of technology, so these companies can continue innovating. A program that addresses this is the MEP National Innovation Marketplace, which facilitates connections between sources of innovations and companies that need them to develop new products or processes or overcome technical barriers.

MEP INNOVATION SERVICES

There are many obstacles to overcome when moving an idea from conception to the commercial marketplace. Challenges exist that can derail innovation at every step along the way: ideation, market research, design, prototyping, manufacturing, identifying suppliers, financing development expenses, marketing and product rollout. On top of that, the single step likely to yield the highest economic benefit to the region – manufacturing the product locally – is often neglected. When manufacturing leaves the region or the nation, an opportunity for capturing value and creating jobs is missed. As manufacturers work to develop new products, diversify into other markets, and seek out ways to compete on product superiority and quality, MEP has developed a range of tools and services to help. Two examples include:

The Innovation Engineering Management System (IEMS), which accelerates a continuous flow of innovations to address a manufacturing firm's problems and opportunities. It transforms innovation from a random event into a reliable system for profitable growth. IEMS projects include one or more stages of a four-stage process – Define, Discover, Develop and Deliver – intended to encourage company culture change or to help companies adopt a system for moving innovative ideas from the concept stage to the introduction of new products, services and processes. IEMS services might include a series of team workshops to identify product line extensions, new customers, or new products/services. It could also involve a series of coaching activities over several weeks using the Innovation Engineering tool kit to translate ideas into written concepts, to mine for new technologies, to address death threats or to bring clarity to a new concept.

Lean Product Development applies the waste elimination philosophy of lean operations to the product development process. The service helps manufacturers reduce time to market, improve resource utilization, and reduce new product development risk, while cutting waste and reducing product costs and product development expense. Firms that embrace the practical, waste-eliminating methods of Lean Product Development and Lean Product Design have reported up to a 50% reduction in launch schedule, dramatic improvements in gross margin and enhanced customer satisfaction.

Sources: NIST MEP Program website; NIST MEP, *Hollings Manufacturing Extension Partnership: A Commercialization Collaborator*, 2013; NIST MEP, *From Idea to Design to Manufacturing to Market: The Manufacturing Extension Partnership's Role in Innovation*, October 2011

Integrate the Export Assistance World with the Innovation Eco-system for Established Manufacturers

Although there is a national emphasis on spurring innovation and a parallel emphasis on exporting, the two efforts seem rarely to intersect in a meaningful way.⁶⁶ This is a missed opportunity to assist innovators with international growth opportunities.

What We Need To Do Differently Studies find that companies that innovate tend to be more collaborative and information-seeking, which are behaviors that correlate with export intensity.⁶⁷ The export assistance community needs to be better integrated with networks of companies that are working to innovate, such as cluster initiatives, executive peer learning groups, and university-industry collaborations such as research parks. This would put export assistance providers in a position to work with clients that have a greater chance of success in global markets.

In addition, export assistance organizations should more closely coordinate with the innovation services programs offered through MEP centers. Rather than being separate activities, export assistance and innovation services should ideally be coordinated as part of an overall global growth strategy for SMM clients. For example, introduction of an innovative new product may drive SMMs to attend foreign tradeshow, expand into new countries, or distribute through new channels. Clients will benefit if export

specialists and MEP innovation consultants work together to facilitate a client's global growth and innovation strategy.

Regional cluster initiatives, in particular, can support exports in several ways – they facilitate innovation, partnerships, networking, mentoring, and peer-learning about international, and they can help SMMs to join supply chains. Promoting “export opportunities among competitive industry clusters” is a National Export Initiative strategy. In a 2011 President's Export Council meeting, Gene Hale, a member of the council and its SME committee, suggested that NEI needed to become REI – or regional, in effort. He said, “We have to go to the grass roots and formally establish — and I say formally — establish support for regional export initiatives and fully utilize public private partnerships.”⁶⁸

The export assistance world can do more to promote exports through cluster initiatives. Although increasing exports is one of the goals of the SBA's Regional Cluster Initiative program, of the 89 participants who wanted to increase exports, only 14 (69%) reported that they did so because of cluster activities.⁶⁹ On the other hand, the clusters were effective at helping companies form alliances and spurring companies to develop new products.

Connect the Export Assistance World to the Innovation Eco-system for Start Ups

Many start-up/ early stage, technology-based companies have innovative products with global potential. So increasing the pool of startup technology companies also increases the pool of *threshold* companies with high potential export products. Federal and state governments invest in a number of programs to advance commercialization of innovative technologies, increase the number of successful startups, and develop advanced manufacturing technologies. Specific examples range from incubators, technology transfer programs, university technology commercialization centers, and new programs such as the federal Advanced Manufacturing Partnership which intends to “support applied research programs in new technologies with the potential for transforming impact.”⁷⁰ All of these programs foster the creation of *threshold* companies.

Furthermore, many start-up companies are compelled to pursue global markets right away – i.e. are born global – for a number of reasons: 1) They target niche markets that require global sales to drive scale and growth and to amortize R&D costs; 2) they need to exploit global markets quickly before a technology advantage evaporates (this includes the need to obtain patent protection in global markets soon after obtaining a U.S. patent); and 3) global markets are sometimes easier to access, for example, in medical devices, where it may be easier to obtain regulatory approval to conduct clinical trials or to conduct R&D outside the U.S. For these reasons, startups often need to exploit international markets quickly to increase their chance of survival and success.

By connecting technology startups – and the R&D and technology commercialization ecosystem more generally – with international market demand, the export assistance community should be able to increase the success rate of these companies and the commercialization rate of new technologies. In other words, export assistance organizations should be able to help startups and technology development networks to fully exploit global market opportunities.

However, the export assistance world rarely targets startups because of current measures and incentives. We tend to focus on established companies, where the likelihood of significant measurable results, in a short period of time, is much greater. Startups companies have a high failure rate, and it may take years before products and sales come to fruition. However, some of these companies offer the potential for significant future growth.

There have been some recent attempts to determine how best to serve technology startups. For example, Pennsylvania's Center for Trade Development (CTD), together with the Pittsburgh Technology Council launched TechExport, a program designed to "raise awareness of international business opportunities among technology businesses and to assist them in launching or increasing their export sales."⁷¹

What We Need To Do Differently Given the high failure rate of startups, the ROI of the new programs described above has not yet been determined. But it is worth exploring the economic benefit of this approach and learning from the experimental programs taking place. If the export assistance community can determine how to provide help to these companies in a targeted way that generates long-term results (as they won't happen overnight) and avoids wasting too much effort on companies that fail, we may be able to make a significant contribution toward export growth.ⁱ

ⁱ We recognize that assisting start-ups runs counter to our recommendation that export assistance organizations prioritize companies with over 20 employees. That is another reason why we must find models that avoid expending too much effort until a company has demonstrated a high likelihood of export growth.

⁶⁵ EDA, *Congressional Budget Request Fiscal Year 2012*

⁶⁶ Interview with innovation consultant, 7-13-12

⁶⁷ Elisabeth Lefebvre, Louis A. Lefebvre & Mario Bourgault, "R&D-Related Capabilities as Determinants of Export Performance", *Small Business Economics* (1998) 10: 365–377; Dirk De Clercq, Harry J. Sapienza & Hans Crijns, "The Internationalization of Small and Medium-Sized Firms," *Small Business Economics*, (2005) 24: 409–419; USITC, *Small and Medium-Sized Enterprises: U.S. and EU Export Activities, and Barriers and Opportunities Experienced by U.S. Firms*, July 2010

⁶⁸ Transcript: The President's Export Council Holds a Meeting to Discuss the Council's Recommendations on Export Promotion - Final, March 11, 2011

⁶⁹ SBA, *The Evaluation of the U.S. Small Business Administration's Regional Cluster Initiative: Year 1 Report*, June 2012

⁷⁰ PCAST, *Report to the President on Ensuring American Leadership in Advanced Manufacturing*, June 2011

⁷¹ Pittsburgh Technology Council website