



UNITED STATES MANUFACTURING COUNCIL

August 3, 2016

The Honorable Penny Pritzker
Secretary of Commerce
United States Department of Commerce
Washington, DC 20230

Dear Madam Secretary,

There are more than 250,000 manufacturing firms in the U.S. and over 98% of them are considered smaller manufacturers and suppliers¹ (SMEs), with less than 500 employees.² SMEs make up the intricate network of tool, die, tier manufacturers, and subcontractors necessary for our highly distributed manufacturing ecosystem to function. A recent White House and Department of Commerce (Commerce) report³ noted SMEs constitute a vital part of the manufacturing ecosystem, and employ more than 40% of all U.S. manufacturing workers, a percentage that has increased over the past three decades.⁴ SMEs' success and ability to support innovation affects the competitiveness of the entire supply chain. These smaller firms can face unique challenges because of their scale in adopting new technologies and the latest practices, including cybersecurity safeguards, technology standards, and lean production techniques. These weaknesses hurt the overall supply chain by limiting quality and efficiency improvements and reducing agility of the highly networked U.S. supply chain.

On March 18, 2015, President Obama announced the launch of a *White House Supply Chain Innovation Initiative* focused on building public-private partnerships to strengthen the small U.S. manufacturers that anchor the nation's supply chains. On July 9, 2015, the Department of Commerce convened a Supply Chain Innovation Roundtable at the White House to recognize best practices and honor companies committed to doing more to strengthen small U.S. manufacturers.⁵ In support of this important initiative, you requested that the Manufacturing Council (Council) provide input with respect to the important policies and questions related to U.S. supply chain innovation raised by Commerce,⁶ taking advantage of the diversity of our U.S. manufacturing sector as represented by the Council.

Council members reviewed relevant research papers from a wide range of national subject matter experts,⁷ conducted a small manufacturers roundtable in Chicago alongside staff from the White House initiative, provided input to organizers in support of the July 9, 2015 White House Roundtable agenda, and participated actively in the July 9 White House Supply Chain Innovation Roundtable itself (representing both large and small manufacturers and varied industries). Council members also collaborated with Commerce staff assigned to the supply chain innovation efforts throughout the term. We are honored to have had the opportunity to shape and participate in this important forum where Commerce gathered perspectives on the overall state of the American supply chain ecosystem and

effective strategies employed to help small manufacturers upgrade their capabilities and improve interaction with their customers.

We are writing to offer a summary of observations and recommendations for consideration regarding further opportunities for Commerce to advance U.S. supply chain innovation and therefore long-term competitiveness of our manufacturing sector.

Observations: Effective practices to help small U.S. manufacturers upgrade capabilities

Through our research and engagement, the Council identified several emergent themes of effective practices to help small U.S. manufacturers upgrade capabilities. Effective practices include: 1) Collaborative procurement practices and policies by industry and government,⁸ 2) Proactive and sustained supplier and supply network development, and 3) Facilitating connections and creating awareness of desired capabilities or market opportunities. These practices are presented in Appendix A along with notable examples and example providers for future reference by Commerce and industry as assets and concepts that can be leveraged.

Observations: Enabling conditions that improve smaller suppliers' ability to innovate and adopt new technologies

The Council also identified several conditions that improved SMEs' likelihood of success in adopting new technologies or innovating their firms. These enablers are summarized in Appendix B for reference by Commerce for future policy development.

Recommendations for consideration: Opportunities to advance U.S. supply chain innovation

We recognize the scale and complexity of this critical challenge and also appreciate the need to identify practical near-term actions that can be taken toward improvement and long-term resolution. Summarized below are initial opportunities identified for consideration by Commerce.

- **Awareness:** Underscore the importance of supply chain innovation and sharing effective practices (summarized in Appendix A) that help SMEs upgrade their capabilities. Senior federal and Commerce officials could continue to amplify the importance of U.S. supply chain innovation to the C-Suite in industry (CPOs, CTOs) and to reinforce the importance of this critical issue for long-term U.S. prosperity and security. Increasing and sustaining awareness could take the form of 1:1 meetings, keynoting industry consortia and trade or functional association meetings, Commerce or White House convening and/or keynoting larger manufacturers and industry leaders' executive sessions, and/or keynotes during Manufacturing Day. Officials may celebrate and shine a light on companies demonstrating leadership in U.S. value chain cultivation. Further, Commerce officials could encourage private sector leadership on supply chains; manufacturing industry leaders can regularly self-convene as peers and with their largest suppliers to share best practices and cascade the vision for long-term supply chain

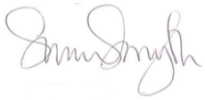
innovation and sustainability. Awareness and communication should be sustained over time with a cadence that will reinforce the importance and facilitate the long-term changes required.

- **Strategy:** Develop with industry and disseminate a long-term U.S. Manufacturing Strategy.⁹ A clear strategy provides direction and certainty that will guide government policy decisions (federal, state, and local) and industry investment choices. This in turn will inform and guide large manufacturer strategies and permeate across their U.S. supply chain through larger tiers and the SME small manufacturer and supplier backbone.
- **Transparency:** Catalyze and publicize a well-organized platform of assets and resources to facilitate SME innovation. Many federal, state, regional and industry specific assets and programs exist to encourage and accelerate SME innovation and many companies offer customized programs for their suppliers to build a range of capabilities. However, most of these programs have siloed marketing and limited funding for outreach and communications. An easy to access, accurate and low overhead information portal could improve visibility of available assets (e.g., tax incentives, grants, loan programs, research, tools, institutes, MEP service lines, industry sponsorships) to SMEs for their innovation efforts. A structured navigation or search capability would also help users (SMEs, industry, intermediaries) connect all available programs, and could allow for vetted programs to dynamically contribute their offerings.
- **Inclusion:** Continue to reinforce and encourage SME supply chain engagement in the NNMI priorities. We congratulate the administration on the significant progress made in launching the NNMI and the goals for full supply chain participation. Commerce could reinforce with NNMI the importance of maintaining differentiated membership levels and investment requirements that encourage inclusion of SMEs. Further, Commerce could continue to encourage project calls be assessed on their level of inclusion of the supply chain and SMEs to facilitate commercialization of these high priority technologies.
- **Connectivity:** Expand utilization of the Hollings Manufacturing Extension Program (MEP) network as an intermediary to connect clusters of SMEs to capability development and innovation lanes most aligned with high potential commercial opportunities involving large customers in their region. New market studies that identify viable products and business models for an industry and region can be utilized by MEPs as a platform strategy to provide ‘one-to-many’ insight and direction to regional SME manufacturers on high potential growth opportunities (e.g., NNMI topics in that region). Incorporating supply chain networking around focal opportunities can facilitate co-development, teaming/partnering and customer introductions.
- **Business Climate:** The 2012 President’s Council of Advisors on Science and Technology (PCAST) considered and adopted the report and recommendations by the Advanced Manufacturing Partnership (AMP) Steering Committee which detailed several proposals for tax and regulatory policies that would help level the global playing field and provide incentives for productive investment to rebuild and strengthen the domestic manufacturing ecosystem.¹⁰ These recommendations were developed through an industry-driven public private partnership with a focus on accelerating U.S. advanced manufacturing. Several recommendations are fully

applicable to innovation of the U.S. supply chain network. The Council supports these recommendations from the 2012 AMP report and encourages Commerce to both continue efforts within Commerce and also to encourage collaboration and support from other federal agencies and future administrations toward tax and regulatory reform necessary for the U.S. supply chain to compete more effectively with sources from other countries.

Again, we are honored to have had the opportunity to participate in shaping the early dialogue around the important issue of U.S. supply chain innovation. The Council recognizes and fully supports the administration's emphasis on this critical contributor to long-term U.S. economic vitality and security.

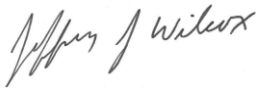
Respectfully submitted,



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Appendix A: Observations: Effective practices to help small U.S. manufacturers upgrade capabilities

Effective Practices	Examples	Actors ^{II}		
		G	I	E
Collaborative procurement policies & practices by industry and government ¹²	Improved communication flow			
	<ul style="list-style-type: none"> Advocating to larger manufacturers the importance of supply chain competitiveness and innovation to national prosperity and security 	X		
	<ul style="list-style-type: none"> Recognition and promotion of high performing small manufacturers, e.g., corporation specific annual supplier award, corporation specific preferred suppliers 	X	X	
	<ul style="list-style-type: none"> Celebrating and recognizing larger manufacturers with best practices in supplier perception and relationships (e.g., automotive OEM ratings) 	X	X	
	<ul style="list-style-type: none"> Anonymous supplier feedback surveys utilized for internal continuous improvement 		X	
	Culture and mindset change			
	<ul style="list-style-type: none"> Aligning purchasing organization mindset to goals of “Value Chain Excellence” and understanding long-term “Total Cost of Ownership” for supply chain vs. transactional and “Piece Price” mindset. 		X	X
	<ul style="list-style-type: none"> Use of training programs to change organization mindset and flow down change. 		X	
	<ul style="list-style-type: none"> Reinforcing culture of cultivation of supply network as an alternative to hunting 		X	
	Collaborative incentives, systems and tools			
	<ul style="list-style-type: none"> Use of balanced supplier scorecards and aligning performance ratings with more favorable commercial terms 	X	X	
	<ul style="list-style-type: none"> Use of long-term agreements (multi-year) between customers and suppliers where appropriate 	X	X	
	<ul style="list-style-type: none"> Utilizing fair profit assumptions in cost models 		X	
	Access to resources and capital			
	<ul style="list-style-type: none"> SupplierPay:¹³ accelerated payment terms to small suppliers 	X	X	
	<ul style="list-style-type: none"> Supplier access to test labs, IP expertise, and research organizations at nominal or reduced costs 	X	X	X
	<ul style="list-style-type: none"> The Small Business Innovation Research (SBIR) program 	X		
Proactive and sustained supplier and supply network development ¹⁴	<ul style="list-style-type: none"> Supplier capability and risk assessments supported by coaching 		X	
	<ul style="list-style-type: none"> Larger manufacturers’ specific certifications and requirements, and alignment across industry sector and relevance for supplier’s commodity 		X	
	<ul style="list-style-type: none"> Supplier training programs and online training opportunities (multi-level, functional, industry specific, company specific) 		X	X
	<ul style="list-style-type: none"> Mentor/protégé programs between suppliers and between 		X	

	larger and smaller manufacturers			
	<ul style="list-style-type: none"> • DoD supply chain grants in NM, WI, SC 	X		
	<ul style="list-style-type: none"> • MEP supply chain optimization services utilized regionally and nationally¹⁵ 	X		
Facilitating connections and creating awareness of desired capabilities or market opportunities ¹⁶	<ul style="list-style-type: none"> • Networking and matchmaker events between SMEs and larger customers 		X	
	<ul style="list-style-type: none"> • Supply chain networking events around a specific technology/opportunity/supply chain topic, e.g., clean tech, light weighting 	X	X	X
	<ul style="list-style-type: none"> • Access to university and national labs via engagement offices (with models tailored for SMEs) or other programs, e.g., LabImpact 	X		X
	<ul style="list-style-type: none"> • Searchable IT platforms of suppliers for matchmaking (IBM), American Supply Chain Matchmaking (SBA, MEP, SBDCs) 	X	X	
	<ul style="list-style-type: none"> • Earlier engagement with SMEs on product development opportunities 		X	
	<ul style="list-style-type: none"> • Co-development of applications or technologies between larger manufacturers and SME suppliers 		X	

Appendix B: Observations: Enabling conditions that improve smaller suppliers' ability to innovate and adopt new technologies

- Strategic growth planning: Companies have developed and are executing a visible long-term strategic plan.
- Operational maturity: Mature companies that already have a strong underlying business and operational platform in place.
- Networked organization: Companies are partnering or prepared to partner within a networked supply chain (versus fully organic development of capabilities or full in-sourcing).
- Talent pipeline: Companies are able to gain access to skills and knowledge either through local talent to hire or resources to contract and collaborate.
- Adoption of industry standards: When larger manufacturers within an industry sector co-develop and align supply chain requirements to an industry standard, it can reduce cost, improve quality and reliability and improve overall supply chain productivity. Small manufacturers within the supply chain are able to align significant components of their operating model to industry-wide standards (versus supporting a multitude of differentiated customer specific standards). This lowers overhead cost, simplifies operations and also decreases entry barriers for small manufacturers to service a wider array of customers within the industry.
- Capital sources: Companies are able to gain access to low cost capital or incentives for investment in innovation, e.g., cost share, reduced cost, preferred financing and improved payment terms.
- De-risking investment: Customer de-risking of small supplier investments through use of collaborative procurement policies, including long-term supply agreements, co-development projects, preferred supplier status.
- Favorable business climate: Global competitiveness is critical to long-term U.S. supply chain sustainment and innovation. It is critical that tax and regulatory policies level the global playing field for domestic manufacturers and their overall supply chain.

¹ Often this category of firms by size are referred to as small and medium-sized enterprises. In the interest of clarity, we will utilize the abbreviation SME to represent the body of smaller suppliers in the U.S. supply chain.

² U.S. Census Bureau 2013 Data by enterprise and employment size <http://www.census.gov/data/tables/2013/econ/susb/2013-susb-annual.html>

³ https://www.whitehouse.gov/sites/default/files/docs/supply_chain_innovation_report_final.pdf

⁴ U.S. Census Bureau 2013 Data by enterprise and employment size <http://www.census.gov/data/tables/2013/econ/susb/2013-susb-annual.html>

⁵ <https://www.whitehouse.gov/the-press-office/2015/07/09/fact-sheet-convening-manufacturing-leaders-strengthen-innovative>

⁶ Questions posed by Commerce: Where there are gaps in information flow within supply chains? What mechanisms exist to help manufacturers adopt new technologies? What effective practices have you seen to help small manufacturers upgrade their capabilities?

⁷ Case Western, Georgia Tech, White House White Papers, National Academies and AMP 2.0 initiative reports

⁸ In general, building relationships based on the total value created over the long term improves the whole supply chain. Participants in the White House Supply Chain Innovation Roundtable found significant benefits from valuing suppliers' contribution to innovation and quality, as well as competitive prices. These benefits included faster product lifecycles and incorporation of digital technologies, and lower overall total costs. Participants cited the keys to achieving these benefits were long-term collaboration, and cultivating long-term supplier capabilities ("*farming*") instead of simply engaging ("*hunting*") one-off suppliers based on existing capabilities or prices.

⁹ In 2004, Commerce published "Manufacturing in America: A Comprehensive Strategy to Address the Challenges to U.S. Manufacturers." With the significant changes that have occurred in 12 years, there is an opportunity for the U.S. to issue a new updated strategy. A 20-25 year strategy would provide the long range direction, a meaningful target of 2040, and would be within the grasp of a broad array of manufacturing companies, especially SMEs.

¹⁰ Specific tax and regulatory policy recommendations supported in this letter to improve U.S. supply chain innovation include: recognizing the importance of manufacturing through the tax code, strengthening R&D tax credits, creating an internationally competitive corporate tax system, and streamlining regulatory policy through early engagement and collaboration between regulators and the regulated community and use of objective cost benefit analyses and risk assessments that rely on the best available science. Full details of the recommendations may be found in the full AMP Steering Committee report https://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast_amp_steering_committee_report_final_july_17_2012.pdf (Detail on pages 55-56 and Annex 4 Policy Workstream report https://www.whitehouse.gov/sites/default/files/microsites/ostp/amp_final_report_annex_4_policy_july_update.pdf)

¹¹ Each example listed could be implemented by government, private sector industry, education or a combination. The table indicates specific actors that could be involved with the highlighted examples of positive supply chain innovation practices. “G” represents government, “I” represents private sector industry, and “E” represents education and academia.

¹² Example providers include Department of Commerce/Secretary, White House, larger manufacturers and often industry leaders; examples cited from Volvo, Toyota, UTC, Whirlpool, Department of Commerce/NIST, Department of Commerce/SBA, iIndustry and trade associations, market research providers, economic development organizations

¹³ Supplier Pay Initiative: SupplierPay builds on the Federal Government’s QuickPay initiative, which President Obama launched in 2011. QuickPay requires federal agencies to expedite payments to small business contractors with the goal of paying within 15 days. SupplierPay is the private sector’s equivalent, where companies have committed to pay small suppliers faster or help them get access to lower cost capital. <https://www.sba.gov/about-sba/sba-initiatives/supplierpay-initiative>

¹⁴ Example providers include larger manufacturers (customers) and often industry leaders, Hollings Manufacturing Extension Program, Department of Commerce, Department of Defense, industry or trade associations, affinity associations (e.g., SBA, MMSDC, WBENC)

¹⁵ For more information about MEP Supply Chain Optimization service capabilities and examples of large scale national efforts information can be found on <http://www.mepsupplychain.org/resource/>

¹⁶ Example providers include larger manufacturers (customers) and often industry leaders, economic development organizations, Department of Commerce: NNMI and MEP network, National Labs with SME engagement centers, universities with SME engagement centers, affinity associations (e.g., SBA, MMSDC, WBENC), media and marketing publishers