



Project Profile: St. Louis

Impact Statement

The St. Louis Team used OEA funds to develop a supply chain map of the Missouri defense ecosystem, enabling the Team to focus government support on the defense industrial base and provide cybersecurity awareness training and assessment services to these businesses. Further, supply chain mapping identified challenges faced by defense suppliers, resulting in plans for a regional Advanced Manufacturing Innovation Center with the potential to provide research, training and production support to businesses. These activities increase the resiliency and readiness of the DoD by leveraging regional support for defense suppliers and working to address challenges faced by these businesses.

Key Project Takeaways

The St. Louis Economic Development Partnership used Industry Resilience funding to coordinate and catalyze regional support for the defense industrial base. Supply chain mapping analysis allowed the St. Louis Team to demonstrate the size and scope of Missouri's defense industry to regional stakeholders, attracting the support of large defense suppliers, such as Boeing, and government officials. This resulted in regional support for defense suppliers through existing government services and the Regional Advance Manufacturing Partnership. This increases DoD resiliency by focusing government services in support of maintaining and strengthening the defense industrial base. OEA funds also financed the development of plans for an Advanced Manufacturing Innovation Center with the potential to improve production and research capabilities of local manufacturers. The AMIC benefits DoD readiness by increasing the production capacity and capabilities of defense suppliers. Finally, supply chain mapping provided the St. Louis Team with a pool of companies to provide cybersecurity awareness training and assessment services to, helping raise the cybersecurity preparedness of the region's defense suppliers.

Project Description

Rationale

The DoD is a major contributor to the St. Louis, MO-IL economy. In fact, the St. Louis region supports one of the largest concentrations of aerospace employment in the U.S. – led by Boeing's Defense, Space & Security Division, which is headquartered in the St. Louis Region. The presence of Boeing has for many years provided a solid regional base for defense sector spending and aerospace manufacturing jobs. It also means that much of the success of St. Louis' aerospace manufacturing sector is closely linked to very specific defense contracts for final assembly of F/A-18, F-15, and C-17 aircraft, all of which are expected to reach the end of production in coming years. Recognizing this fact, the St. Louis Economic Development Partnership (SLEDP) turned to the DoD's Office of Economic Adjustment (OEA) to develop an adjustment plan to diversify and strengthen the regional aerospace and defense economy to both serve new DoD programs through increased capacity and reduce dependency on DoD contracts.

Program Activities

With the OEA funds, St. Louis increased the resiliency of regional defense suppliers. The St. Louis Economic Development Partnership created the Regional Advanced Manufacturing Partnership (RAMP) to foster collaboration between economic and workforce development organizations, government



officials, academia, and private industry. RAMP, which convenes 300 members quarterly, acts as the oversight body for OEA funded activities. The membership organization is composed of government officials (state, county, municipal), as well as other key public, private, academic and non-profit organizations with substantial interests in addressing the needs of defense businesses and workers. Private members include manufacturers, prime DoD contractors, subcontractors, suppliers, and people from entrepreneurship, innovation, and capital ecosystems. A critical element to the success of RAMP has been the active participation of Boeing, along with other major defense firms in the region.

Formal work products and presentations supported by the RAMP network include topics such as Action Planning, International Trade Development, Business Transition, Entrepreneurial Programming and a Defense Supply Chain Analysis. Key recommendations from these work products were related to the categories of Connecting, Enabling, Coaching and Programming for defense businesses, including:

- Partner with regional organizations to expand defense industry associations (Connecting)
- Connect with existing military assets on tech-based solutions (Connecting)
- Connect private sector and higher education researchers around enabling technologies (Connecting)
- Find non-defense markets for suppliers (Enabling)
- Educate state economic development organizations on best practices (Enabling)
- Develop a training program to assist companies with DoD contracting (Coaching)
- Provide contractors and potential contractors more clarity on DoD budgeting (Coaching)
- Use and maintain the supply chain map (Programming)
- Provide international export assistance (Programming)
- Create programs aimed at helping veterans get jobs (Programming)
- Develop a university-housed innovation center (Programming)

This last recommendation led to the development of a master plan and financial sustainability study focused on the establishment of an Advanced Manufacturing Innovation Center (AMIC) for the St. Louis region. The AMIC would provide the necessary infrastructure to sustain OEA grant efforts and secure a solid future of manufacturing growth and vitality for the region. The group also used OEA funds to identify almost 2,500 defense suppliers across Missouri in a supply chain mapping analysis effort.

Phases 3 and 4 of the effort utilized company data collected during the supply chain mapping effort to provide cybersecurity awareness and implementation training to defense suppliers. The St. Louis Team tapped Missouri Enterprise, the state's MEP Center, to provide small and medium-sized manufacturers with increased awareness of cybersecurity threats and to help develop implementation/action plans that help manufacturers become compliant with DFARS 252.204-7012 cybersecurity controls. This program enhances the overall cybersecurity of Missouri's defense industrial supply base, which will in turn ensure a deeper DoD supply chain, as well as support modernization and diversification efforts of the businesses themselves. Cybersecurity Compliance workshops were held for small and medium size defense contractors, subcontractors, and suppliers in the greater St. Louis region, in addition to Kansas City, Springfield, and Cape Girardeau, Missouri. From these workshop participants the St. Louis Team



provided NIST cybersecurity risk assessment services to nine companies that matched the selection criteria, helping businesses develop and implement a cybersecurity preparedness plan.

Resiliency Impacts

Increasing Awareness of the Defense Industrial Base

Convenings and partnerships made possible by OEA grant funding helped develop long-term relationships necessary to sustain support for defense suppliers in the St. Louis Region beyond the grant. When RAMP began, it was discovered that gaps existed in the awareness of the regional importance of military aerospace & advanced manufacturing. Community organizations did not yet appreciate their role to play in supporting advanced manufacturing, and there were disconnects between advanced manufacturers and the public workforce system. The St. Louis Team used supply chain mapping to produce the *Missouri Defense Supply Chain Analysis*, which raised regional awareness of the size and scope of Missouri's defense industrial base and identified challenges facing the industry. OEA funds further provided an opportunity for RAMP members to engage with industry partners, increasing interest in and the credibility of the membership organization. The St. Louis Team played an active role in developing and maintaining relationships with defense contractors and manufacturers, allowing for government, academic, and other RAMP constituents to develop their own relationships with defense suppliers. RAMP convenes 40 to 70 members every quarter, and the St. Louis Team provides presentation materials from each meeting, as well as keeping members updated on industry news via a monthly newsletter, frequent email announcements, and social media posts.

Increased awareness of the defense industrial base among RAMP partners resulted in the coordination and leveraging of regional resources in support of defense suppliers across state lines. The Missouri supply chain analysis helped policy makers understand issues facing the industry and how they can support defense suppliers through new or existing policy. Increased partnership between RAMP members and St. Louis defense suppliers allowed the St. Louis Team to leverage regional efforts (e.g., Global Cities Initiative, Promise Zones, Regional Freightways, High-Speed Rail and Lambert Airport expansion initiatives) in support of defense suppliers. RAMP now serves as a clearinghouse linking businesses with unique vendors, connecting companies to the Missouri MEP Center, and for introductions for any number of interests. Increased awareness of defense suppliers allowed the St. Louis Team to leverage existing government resources and staff capacity to maximize outcomes.

Prior to the OEA grant, policymakers were not systematically examining the St. Louis aerospace and defense (A&D) sector from the region-wide perspective. State efforts to support the industry were piecemeal and uncoordinated. OEA support led to the development of a multi-state, regional group to discuss support for the A&D sector. RAMP provided the foundation for an on-going and intentional formation of a regional advanced manufacturing "ecosystem" – with connections across manufacturers, workforce intermediaries, freight providers, economic development, and community organizations – sustaining the region's leadership in advanced manufacturing and enhancing support for DoD efforts

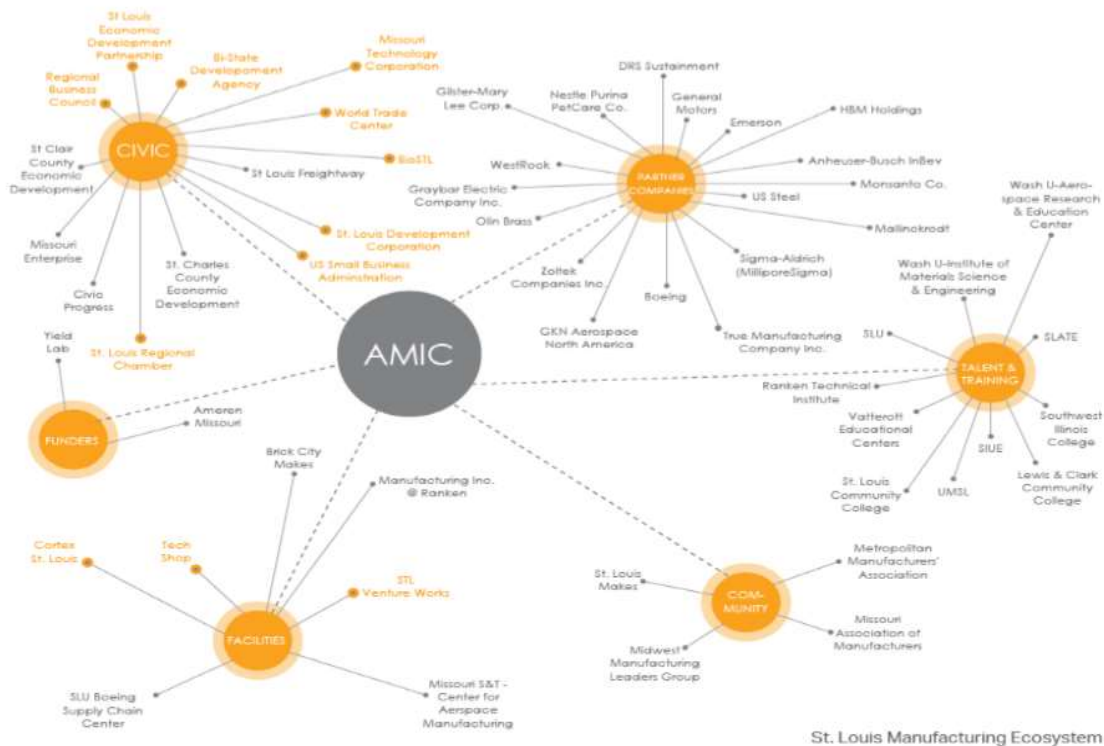


with an expansive set of community intermediaries ready and able to support the nation’s defense industrial base.¹

Readiness Impacts

Improved Capability and/or Production Adjustments

OEA funds played a crucial role in the planning of an Advanced Manufacturing Innovation Center (AMIC) for the St. Louis Region. The St. Louis Team used IR grant funds to develop a master plan and financial sustainability study for the center. The AMIC offers the potential to sustain momentum generated from OEA support by offering area companies continued opportunities for collaboration, innovation, and empowerment. The center enables companies the ability to collaborate within a network of other individuals and entities with similar objectives. Companies can maximize the results of their own R&D efforts through pooled resources, industry-wide research projects, and through the creation of new open-source data and information which leads to new innovations. Companies also benefit through licensed technologies, access to an upgraded talent pool, and general industry progress through professional and trade associations. Increased production and research capabilities enabled by the Center would provide the DoD with a more agile, innovative, and efficient manufacturing base.



¹ Observations on RAMP and its impacts to the region and DoD included a focus group of organizations and businesses active in the partnership from the St. Louis Regional Chamber, WB Industries, Ameren, Tech Manufacturing, Swip Systems, St. Louis Makes, Patriot Machine, Stroco Manufacturing, and St. Louis Economic Development Partnership.



The ecosystem map above shows how many companies, organizations, and individuals in the St. Louis manufacturing ecosystem can connect through the AMIC. An AMIC will also empower companies by providing exposure to students and other individuals who may be prospective employees and partners in the business. It can provide companies with access to highly specialized tools and technologies at a cost much less than acquiring them separately. Access to human capital and to capital equipment is empowering for businesses. To fully realize and stand-up the AIMC in St. Louis, key follow up steps are required, including: recruiting champions; establishing the legal entity-governance structure; securing initial funding, hiring leadership, defining programming; site selection, and sustaining funding over time.

Cybersecurity Preparedness

The Government and large Prime contractors have encountered difficulties in being assured that small and medium size subcontractors and suppliers have met the requirements of DFARS 252.204-7012 with regards to cybersecurity compliance. Supported by the OEA grant RAMP helped suppliers in the St. Louis region comply with the DFARS requirements through a series of Cybersecurity Compliance Workshops and assessment services provided to selected contractors. RAMP held four workshops across the state, attended by at least eighteen defense suppliers. From these workshop participants, RAMP selected nine companies to receive NIST cybersecurity risk assessments. Companies were chosen according to selection criteria that included defense dependency (based on the percentage of revenue derived from defense spending), proximity to the St. Louis region, and the number of employees. Outreach from this program resulted in another 22 defense dependent businesses voluntarily and independently adopt NIST 800-171 controls. These activities increased awareness of cybersecurity issues and increased the level of cybersecurity among the region's defense industrial supply base. A stable of secure defense suppliers will in turn ensure a deeper DoD supply chain, as well as support modernization and diversification efforts of the businesses.

Other Community Benefits

By integrating defense suppliers into existing manufacturing partnerships, the St. Louis Team's activities generated numerous spillover impacts into the community. Individuals connected to entrepreneurship services created 16 new businesses. Regional programs helped nine (9) defense dependent businesses launched efforts to transition their business away from defense dependence, some through modernizing their business, some through international trade opportunities, and some through both paths. Further, the State of Missouri and others are using the Missouri-wide Defense Supply Chain Analysis to attract new business to the State and to expand or improve existing business operations. Finally, elected officials and community leaders from throughout the region are more aware of the region's defense dependence, and the intersection between that and our advanced manufacturing ecosystem.

Lessons Learned

Most Important Lessons Learned

The OEA work in the St. Louis region has led to several valuable lessons learned. One lesson is that regionalism, and parochialism within the region, are pervasive and powerful factors. It is important to acknowledge these factors and plan your work accordingly so as not to allow it to stymie your progress.



Second, businesspeople are busy, and they struggle with the inherent conflict between a sense of urgency and the availability of resources. When their book of business is full, they have no sense of urgency to direct the resources toward future opportunities. When their book of business is reduced, their sense of urgency to do something different is great, but they have no resources to do anything about it. It is up to the team to be sure they recognize the urgency while they have the resources.

Third, effective leadership is a rare thing. People, even people who appear to be successful and accomplished, are generally reluctant to take on risk, even if the potential for good is significant. Recruit the best champions you can find and do all you can to support them.

Fourth, it is hard to hold people's interest for any length of time. Attention spans are short and growing shorter. Be thoughtful about your promotion strategies, understand clearly your target audiences, and work for continuity of message.

Fifth, it was learned that there are a few centers of innovation around the globe which are doing amazing work and who deserve our encouragement and support. Some are doing amazing work in software engineering and new digital technologies, while others are leading in applied research with new materials, new processes, new applications of old products and old processes. Keep these examples in front of your audience to always show what is possible.

Sixth, each community has an opportunity to contribute to the work of national security, global stability, and national prosperity.

Seventh, the team learned that the financial and intellectual resources of the OEA and OEA grantees are important and that they can help guide communities toward more resilience in the face of uncertainty.

Eighth, like most OEA grantees, a big challenge in St. Louis was attracting and then retaining the active interest of collaboration partners. The St. Louis Team's approach has always tried to make relationships personal, using face-to-face to invite participation, and relying on electronic means (email and social media) to maintain contact. By keeping the contractors and manufacturers engaged, the agency, academic, and other constituents have remained engaged to maintain their own relationships with the manufacturers and defense contractors. Our success in keeping the contractors and manufacturers engaged has been because the team is made up of people from those sectors.

Sustainability

The St. Louis Team, operating through the St. Louis Economic Development Partnership, continues to attract new people to the RAMP roster. About 50 people attend the quarterly RAMP meetings. The team continues to receive requests from around the region to help connect people and interests, along with requests from other agencies and from academics to weigh in on other topics of regional conversations. The efforts of the team, made possible by the OEA funding support, have managed to sustain interest. That is a primary goal for the team, to generate momentum that continues beyond or without continued OEA grant support.