MANUFACTURING SUPPLIER NETWORKS

Throughout our region, manufacturers face supply chain issues including shipping costs, affordability, inventory management, supply chain disruptions and quality control risks. The PNMP has begun to address this effort to create sustainable supplier networks and improve business-to-business communications to grow opportunities in Advanced Material Science for Advanced Manufacturing.

We plan to advance our supply-chain connection by expanding the capability and resources available to the NW Connectory, Oregon Manufacturing Extension Partnership (OMEP,) and IW Outreach and Training to increase buyer and supplier network connectivity across all advanced manufacturing industries. This support occurs at every level of the supply chains, focusing on smaller, rural and unconnected manufacturers. Key participants in this expansion include the region’s Workforce Investment Boards, Business Oregon, and trade associations including Manufacturing 21, the Pacific Northwest Defense Coalition (PNDC), and the Northwest Food Processors Association (NWFPA). In Oregon and Southwest Washington, we are laying the groundwork to create a solid foundation for acting on supply chain gaps and opportunities.

The bi-state Jobs and Innovation Accelerator Challenge for Advanced Materials and Metals (JIAC/IAM2) metals and advanced materials project has analyzed supply chain issues in the Portland/Vancouver region for three specific industries: aerospace, electronics, advanced machines and materials. Through a Make it in America grant, the OMEP and their partners conducted an extensive supply chain research and analysis project in the mid-Willamette Valley and found that the most common difficulties in supply chain include: 1) High cost in trucking and raw materials (local cost higher than overseas cost); 2) Lack of certain resources/goods in the area (e.g., no mill produces Cross Laminated Timber (CLT); 3) Limited local capacity — lack of frozen storage in the area, lack of commodity markets, and lack of dependable rail services and outbound trucking; 4) Low quality in products and services — long lead times on certain goods (such as plating and anodizing); and 5) Talent gap — the labor force lacks certain skill sets, particularly machining.

OMEP also completed a research project statewide focusing on supply chain issues in rural communities. OMEP and IW will use this information to help companies build stronger local supply partnerships, and thereby increase the speed and quality of delivery throughout our entire region. The vision and end goal is to help companies manage supply relations that consistently deliver high-quality products and services at a competitive cost, more reliably than competitors, while helping local suppliers.

The National Institute of Science and Technology (NIST) Manufacturing Extension Partnership (MEP) has invested extensively in a supply chain optimization delivery system. Specifically, the NIST MEP has developed a supplier development/supply chain optimization program that includes tools such as optimization road mapping: strategy development, objectives, and deployment. The program includes deploying risk management practices, identifying and
evaluating supply chain risks and implementing a total cost of ownership methodology. With sufficient funding, OMEP and IW intend to use the results of the research work described above to deliver the NIST supply chain optimization program. A key element of the initiative is to provide supply chain optimization services to the small/medium manufacturers that serve larger Original Equipment Manufacturers (OEMs). Consequently, a key part of the plan is to offer this capability to OEMs for support in identifying suppliers for improvement.

**Current Capability**

Strengthening the supply chains that support manufacturers in key traded sector businesses is critical to growth in our Pacific Northwest economy. The regional manufacturing ecosystem has significant supply chain opportunities across a whole range of regional strengths as outlined in our key technologies and supply chain section. Key opportunities include:

- **Advanced Wood Products** – Engineered wood product manufacturing, wood preservation, veneer, CLT and other advanced wood product manufacturing.
- **Metals and Advanced Materials** – Light metals, polymers, ceramics, glass and composites.
- **Electronics** – Semiconductors, electrical components, cables, batteries, motors and small electrical equipment.
- **Aerospace and Defense** – Manned and unmanned vehicles and parts, weapons, defense and intelligence systems, satellites and launch vehicles with growing worldwide civilian applications.
- **Industrial Machinery and Equipment** – Both heavy industrial machines and hardware and small-scale machinery and components.
- **Advanced Medical Devices and Equipment** – Sensing, monitoring and scanning equipment such as MRI, PET and CAT Scan diagnostics, ultrasonic and electro-medical lasers and monitors.
- **Clean Technology Components** – Applications include green building, sustainable building materials, renewable energy systems, energy efficiency, and related technologies.
- **Food Processing** – A regional advantage of prized specialty crops (berries, fruit, etc.), as well as wheat in the mid-Columbia region. Opportunities include ingredients, packaging, sanitation, refrigeration technologies, as well as shipping and storage.

**Current Institutions and Existing Programs for Improving Capability**

Greater Portland Inc, Columbia River Economic Development Council, Portland Development Commission (PDC), Manufacturing 21, PNDC, and Business Oregon work together to support both regional and statewide supply chains on two fronts: 1) To build local industry knowledge of suppliers of products, parts and components; and 2) To help large firms and government agencies identify and purchase from suppliers in our region. These efforts include:
• OMEP and IW are service providers that work directly with Pacific Northwest manufacturers to successfully compete in the global economy by optimizing operations and focusing on each company’s specific obstacles to growth. During the last five years, IW worked with over 1,000 companies have resulted in more than $65 million in client cost savings and $407 million in client increased and retained sales. Similarly, OMEP has helped hundreds of companies in Oregon realize more than $58 million in client cost savings and $638 million in client increased and retained sales over this same time frame.

• PNDC is an association of Northwest defense and security industry businesses that works with the defense industry to facilitate greater access to government markets and contracting opportunities.

• The JIAC-IAM2 funding has increased understanding of the supply chain gaps in the metals, electronics and advanced materials sectors in the greater Portland region. Direct assistance was given to companies in the support of business model innovation, supply chain optimization, new product development, market understanding and strategy, and other growth supporting services.

• The NW Connectory is a buyer and supplier network that maintains detailed profiles of industrial and technology companies in the Pacific NW region, across all industries and at every level of the supply chain. In December 2014, OMEP was awarded a NIST Business-to-Business Network Pilot grant for $250,000, to enhance the NW Connectory buyer/supplier network. OMEP worked closely with the PNDC, OregonTech and IW to respond to the federal funding opportunity. OregonTech students will work with OMEP to study the system development lifecycle (Planning, Analysis, Design and Implementation) and make system recommendations.

• The Manufacturing 21 Coalition is an advocate for the manufacturing sector in the region, and partners with local workforce development boards to train workers in timely and critically needed skills, while providing scholarships to stimulate local workforce investments.

• The Gorge Technology Alliance is a nonprofit organization made of organizations and companies involved in the technology industry in the Columbia River Gorge. More than 100 members represent over 2,000 employees in the areas of defense, aerospace, advanced manufacturing, IT, software and telecom.

Gaps

Supply Chain Optimization. The region and manufacturers face supply chain gaps including shipping costs, affordability, inventory management, supply chain disruptions and quality control risks.
Business-to-Business Networking. Enhance limited supply chain connections by expanding business-to-business supply chain opportunities and communication.

**Plans**

1. Advance Supply Chain Connections. Expand the capability and resources available to the NW Connectory, OMEP, and IW Outreach and Training to increase buyer and supplier network connectivity across industries and supply chains, focusing on smaller and unconnected manufacturers. Key participants in this expansion include the region’s Workforce Investment Boards, Business Oregon, and trade associations including Manufacturing 21, the PNDC, and the Northwest Food Processors Association. In Oregon and Southwest Washington, PNMP is laying the groundwork to create a solid foundation for acting on supply chain gaps and opportunities. The JIAC/IAM2 metals and advanced materials project has analyzed supply chain issues in the Portland/Vancouver region for three specific industries (aerospace, electronics, advanced machines and materials). OMEP and their partners will continue their support to the companies in the mid-Willamette Valley to help resolve the challenges identified in the study.

2. Business-to-Business Networking. OMEP is developing a pilot business-to-business network in partnership with PNDC and IW, using and enhancing their NW Connectory database as a baseline.