

Technology Roadmapping: Accelerating Manufacturing USA Progress

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Manufacturing is at the center of all of the products we use every day and is the foundation of a strong U.S. economy. That's why the interagency Advanced Manufacturing National Program Office (AMNPO), headquartered in the National Institute of Standards and Technology (NIST), launched **Manufacturing USA**—a network of 14 institutes focused on novel technology areas designed to accelerate U.S. advanced manufacturing as a whole. In working to build technology roadmaps with four of these institutes—the **REMADE Institute**, the **Institute for Advanced Composites Manufacturing Innovation (IACMI)**, the **Clean Energy Smart Manufacturing Innovation Institute (CESMII)**, and **PowerAmerica**—we have experienced first-hand how a robust, collaboratively developed roadmap can jump-start the progress of these institutes and increase their value to manufacturing sectors and the U.S. economy.

Roadmaps gather the collective viewpoints of diverse stakeholders to provide an initial plan of action — Manufacturing USA Institutes are focused on solving big manufacturing challenges that involve diverse stakeholders with varying needs and priorities, often dispersed across multiple industry segments. Many of these stakeholders seldom find themselves in the same room and may have competing interests, yet they often encounter similar problems that could be addressed on a large scale through coordination and collaboration. Facilitating and synthesizing discussions to define a common path forward in a technology roadmap requires a neutral third party without a stake in the outcome. In serving this role, Nexight has helped institutes identify priority activities with the most potential impact for improving manufacturing quality and productivity, reducing emphasis on a single idea or group of legacy ideas that may not represent the greatest industry needs. By working together instead of in silos, these stakeholders can accelerate manufacturing progress in ways no one company or industry could accomplish alone.

Roadmaps help obtain immediate stakeholder buy-in to ensure Institute sustainability — As Institutes launch and mature, their sustainability depends on attracting members who see a clear value proposition for Institute membership. Institute members are constantly assessing the value gained from their participation. Regular opportunities to offer their perspectives and expertise are critical to setting Institute priorities that resonate with and help to retain paying members. By engaging stakeholders early and often through roadmap development and updates, Institutes demonstrate that they need and value the knowledge and resources of their stakeholders. In turn, these key stakeholders benefit from opportunities to network, which facilitates partnership development and yields business opportunities. As roadmaps are launched and project calls are issued, roadmap participants feel heard and can see their

contributions toward a productive and tangible outcome. They have bought into the Institute's plans and are more likely to buy into Institute membership as well.

Successful roadmaps evolve with technology advances and emerging needs — The most effective roadmaps don't just sit on the shelf and gather dust. While each Institute has focused on developing an initial roadmap that sets the baseline from which work can commence, it is critical for roadmaps to continuously evolve with emerging needs and industry priorities and opportunities. Long-term success is dependent on an Institute's and an industry's ability to continuously measure and evaluate progress, adjust course to focus on efforts that can yield more meaningful results, uncover and address emerging needs, and identify and pursue new opportunities. Roadmaps, therefore, must be regularly evaluated and revised to keep pace with and drive further industry progress.

Our team of experts—experts in manufacturing, stakeholder engagement, technical communications, and graphic design—have developed more than 100 roadmaps across six continents through our decades of experience helping industries, government agencies, individual companies, and professional societies develop cohesive strategies and plans of action. If you are responsible for building a consortia-based roadmap, we can help. We know the power of our [roadmap process](#) to bring groups of people to actionable consensus.