DEPARTMENT OF THE NAVY

ADVANCED MANUFACTURING STRATEGY 2024

Assistant Secretary of the Navy for
Research, Development, and Acquisition

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Foreword from the Assistant Secretary of the Navy for Research, Development, and Acquisition (ASN RD&A)

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Advanced Manufacturing (AdvM) spans several crosscutting technologies with significant implications and applications for the Defense Industrial Base and Naval Warfare. In direct alignment with the Department of Defense National Security Strategy (NSS), National Defense Strategy (NDS), and recently released National Defense Industrial Strategy (NDIS), the operationalization of AdvM has become a strategic imperative and a critical enabler to meeting national security objectives.

The purpose of this strategy is to provide a shared set of guiding principles and a comprehensive framework for the development and transition of AdvM technologies. This approach aims to ensure that our Navy and United States Marine Corps (USMC) maintain their defense dominance by leveraging cutting-edge innovations and technological advancements.

The Department of the Navy (DON) embraces AdvM and our Navy and Marine Corps teams have already started implementing these capabilities and technologies within our activities and acquisition approaches. We will continue to expand these efforts, working with our industry partners, to provide a standard of practice that delivers affordable, lethal capabilities to the warfighter at the speed of relevance.

EXECUTIVE SUMMARY

In the ever-evolving landscape of global security and technological advancements, the Department of the Navy (DON) stands at the forefront of innovation, continuously seeking ways to enhance its capabilities. By aligning manufacturing processes with strategic objectives, the Navy and United States Marine Corps (USMC) ensure a sustained competitive advantage in the Naval domain.

As technology continues to evolve, the DON's methods of manufacturing and management of production information and data must adapt as well. This strategy aims to position the DON at the forefront of Advanced Manufacturing (AdvM) to ensure agility and resilience for current and future challenges. The DON will execute a multi-faceted approach that integrates innovation, engineering practices, technology, supply processes, and collaboration.

AdvM spans several crosscutting technologies with significant implications and applications for Naval Warfare and its Industrial Base, including Additive Manufacturing (AM) or 3-Dimensional Printing, Subtractive Manufacturing (i.e. Computer Numerical Control, CNC), Cold Spray and Directed Energy Deposition and coatings removal, Robotics and Automation, Data Analytics, Advanced Machining, Advanced sensing, measurement, simulation and modeling, and Digitalization and Connectivity.

Successful implementation is a key element in supporting DON objectives for enhanced warfighting capabilities and increased readiness/sustainment. Therefore, AdvM must be incorporated across research and development, weapons system production, in-service depot/maintenance, and deployed operations to fully support naval operations. Additionally, AdvM must be interoperable across our allies and partners.

The DON can achieve a transformative impact on its operational capabilities, efficiency, and resilience in the face of evolving maritime challenges. Through technology maturation and commitment to standardization, the DON can navigate the complexities of AdvM while ensuring the highest levels of quality and reliability for its naval assets. Well-defined digital architecture and workforce development plans will allow the DON to harness a responsive and adaptable AdvM infrastructure in the maritime domain.

While the DON's AdvM strategy holds the promise of transformation, it is crucial to recognize and address the challenges that may impede implementation. Balanced learning, strategic planning, workforce development, supply chain integration, collaboration, and adaptive governance will enable the Department to implement AdvM and ensure a resilient and technologically superior naval force for the future.

STRATEGIC GUIDANCE

In recent years, strategic documents indicate wide recognition that advanced manufacturing capabilities unlock opportunities in system performance and production time as well as the manufacturing workforce. National, Department of Defense, and Naval strategy documents provide the linkage between overarching strategic objectives and advanced manufacturing. Bringing advanced manufacturing capabilities to the Navy and Marine Corps at scale can deliver sustained competitive advantage in the maritime domain.

The DON's strategy is aligned with and supported by the National Strategy for Advanced Manufacturing, 2022, which provides a vision from the National Science and Technology Council. This multi-agency strategy identifies three goals to (1) develop and implement advanced manufacturing technologies, (2) grow the advanced manufacturing workforce, and (3) build resilience into the manufacturing supply chains.

The DON's strategy is aligned with the National Security and National Defense vision.

National Security Strategy (NSS), 2022

The NSS charges for the United States in close collaboration with our allies and partners to "not only be capable of rapidly manufacturing proven capabilities, … but also empowered to innovate and creatively design solutions as battlefield conditions evolve." The full expansiveness of Integrated Deterrence entails: "Integration across domains," "Integration across regions," "Integration across the spectrum of conflict," "Integration across the U.S. Government," and "Integration with allies and partners." These dissuade potential adversaries by creating costs intended to outweigh benefit of destabilizing actions.

National Defense Strategy (NDS), 2022

The NDS identifies a number of key priorities in pursuit of building enduring advantages. Notably, the NDS commits to "the full range of capabilities needed to give U.S., allied, and partners forces a competitive advantage." To support these advantages, the NDS specifically states "The Department will act urgently to better support advanced manufacturing processes (e.g., aircraft and ship building, preferred munition production) to increase our ability to reconstitute the Joint Force in a major conflict." This reconstitution of forces and focus on logistics permeate the NDS.

National Defense Science & Technology Strategy, 2023

The National Defense Science and Technology Strategy commits to "working with our allies and partners, as well as industry, …[to] align research and engineering with acquisition to rapidly field new capabilities at speed and scale." The strategy emphases the acceleration and continuous transitioning of capabilities to provide operational benefits. Applied toward regeneration, this strategy focuses energies on the innovation in industrial processes to support manufacturing at "speed and scale."

National Defense Industrial Strategy (NDIS), 2023

The NDIS outlines actions to create "a modernized, 21st Century defense industrial ecosystem to contribute to the NDS objective of Integrated Deterrence by organizing, establishing, and building the foundational elements of military capability." The strategy outlines four priorities comprised of: (1) Resilient Supply Chains, (2) Workforce Readiness, (3) Flexible Acquisition, and (4) Economic Deterrence. The strategy recognizes that "DoD must develop a networked cooperative framework that enhances defense industrial output by working with allies and partners to de-risk supply chains and advance our ability to engage in co-sustainment, maintenance, repair, and overhaul."

This vision provides specificity to the Secretary of the Navy's vision in his One Navy-Marine Corps Team Strategy, 2023, which highlights three principal priorities to 1) strengthen maritime dominance, 2) build a culture of warfighting excellence, and 3) enhance strategic partnerships. Through rapid production of high-quality, specialized components and equipment critical for naval operations, AdvM plays a pivotal role in achieving this vision.

Similarly, the Chief of Naval Operations (CNO) and Commandant of the Marine Corps (CMC) strategies charge the Naval Services with technological superiority, operational readiness, and responsiveness to evolving maritime challenges. In the CNO's strategy entitled America's Warfighting Navy, there is recognition of the need to continuously create warfighting advantages. The CNOs priorities focus on 1) warfighting, 2) warfighters, and 3) foundation. AdvM can strengthen the foundation and put logistical capability in the hands of the Navy's warfighters. AdvM plays a pivotal role in supporting the CMC's Force Design 2030 (2023) Annual Update by enabling agile force structure adaptation, enhancing logistics and sustainment, and support for modernization initiatives.

Building and enhancing capability in AdvM is vital for maintaining technological superiority, operational readiness, and responsiveness to evolving maritime challenges. By embracing cutting-edge technologies, investing in workforce development, and fostering collaborative innovation, the Navy and USMC can ensure its manufacturing capabilities remain at the forefront of technological advancements in the maritime domain.

APPROACH

Advanced manufacturing spans several crosscutting technologies with significant implications and applications for the Defense Industrial Base and Naval Warfare. Currently, AdvM is defined as the use of innovative technologies to create existing products and/or new products. AdvM leverages innovative technologies to fabricate, repair, rework, or reverse engineer parts and components through novel approaches such as Additive Manufacturing (AM) or 3-Dimensional Printing, Subtractive Manufacturing (i.e. Computer Numerical Control, CNC), Cold Spray and Directed Energy Deposition and coatings removal, Robotics and Automation, Data Analytics, Advanced Machining, Advanced sensing, measurement, simulation and modeling, and Digitalization and Connectivity.

The DON AdvM Strategy focuses on three primary lines of effort to drive incorporation of AdvM capabilities and technologies to meet Navy and Marine Corps needs now and into the future. These lines of effort were identified based upon the integration of advanced manufacturing technologies with the environment and workforce, resulting in clear differences for insertion and scale.

Advanced manufacturing capabilities are disruptive: the engineering practices by which designs are conceived may require multi-disciplinary collaboration, testing, and learning. New weapon systems that incorporate optimized designs for advanced manufacturing will expand commercial industry use in component fabrication, refine quality assurance, and drive opportunities for large-scale expansion in DON's organic maintenance and fabrication activities.

LOE 1. Harness Cutting-Edge Commercial Capabilities for Strategic Advancement

The DON's ability to maintain a competitive advantage hinges upon the Defense Industrial Base (DIB) to use, invest, and implement AdvM as a viable design, production process, and to integrate modern technologies into their supply chain and logistics. Forging strong partnerships with commercial manufacturers is a critical aspect of enhancing the DON's capabilities through AdvM expertise. Collaboration with private-sector entities offers the DON access to cutting-edge technologies, innovation, and efficiency.

The impact of LOE 1 will include new designs not possible with traditional fabrication methods that can deliver faster production and greater reliability. The implementation and application of AdvM in this LOE has the ability to drive permanent changes at scale to depot level repair (LOE 2) and warfighter self-sufficiency (LOE 3).

Strategic Goals

Achieve increased AdvM commercial production through DON acquisition programs spanning shipbuilding, aviation, munitions, and land systems.

Expand DON engineering qualifications and certifications to enable commercial AdvM.

- Solidify standards to make AdvM procurable. Standards will communicate to the DIB the key performance parameters and qualification/ certification requirements.
- Implement certification processes that comply with industry and international standards, fostering trust in the reliability of AdvM techniques.
- Identify capabilities that foster rapid qualification and certification processes.
- Develop Military Specifications (MILSPECs) for procurements and Military Standards (MILSTDs) for processes and production.
- Identify whether a hybrid approach exists to utilize commercial standards as a baseline and incorporate additional requirements to address specific operational needs, aiming to balance cost efficiency with necessary performance criteria.

Expand the supply base of advanced materials through the fostering and development of domestic sources.

Achieve enhanced partnerships with commercial manufacturers to leverage their expertise, capacity, and speed of innovation.

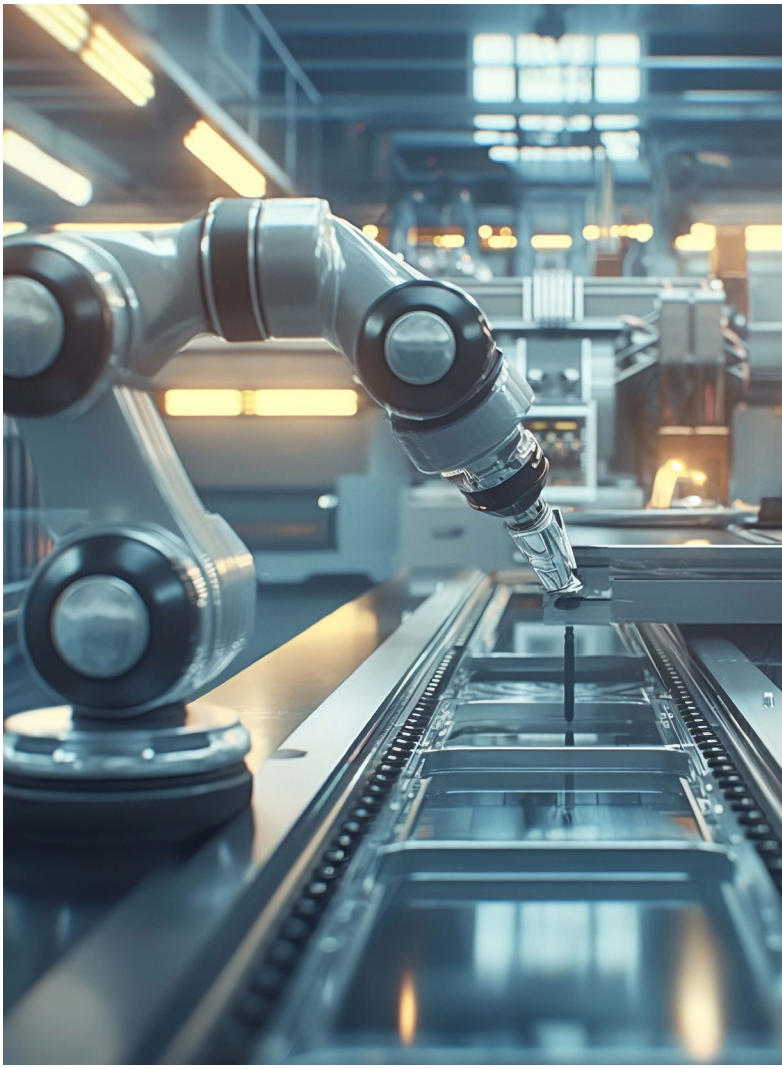
Increase the procurement of commercial spares manufactured using qualified and certified AdvM processes through collaboration with Naval Supply Systems Command and Defense Logistics Agency.

Achieve full traceability in the supply chain to track components and materials seamlessly from origin to final product, ensuring accountability and transparency throughout.

Establish feedback mechanisms from supply chain operations to continuously improve and adapt to emerging technologies, ensuring ongoing enhancement and responsiveness.

Increase the application of AdvM for the creation and upkeep of facilities and infrastructure.

Drive collaboration between DON and industry to combat part obsolescence by utilizing AdvM to mitigate the unavailability of previously accessible parts or services.



Leveraging the expertise of commercial manufacturers through strong partnerships not only enhances the defense sector's technological capabilities but also contributes to economic growth and innovation on a broader scale. This collaborative approach ensures that the DOD/DON remains at the forefront of AdvM advancements, effectively addressing the evolving challenges of the future.

LOE 2. Modernize Organic Depots and Strengthen Intermediate Capabilities

Organic depot modernization is a critical aspect of ensuring that the industrial plant equipment within the DON remains state-of-the-art, efficient, and capable of meeting the evolving needs of defense operations. AdvM technology plays a pivotal role in this modernization process, allowing for increased agility, cost-effectiveness, and improved capabilities.

The Navy's organic depot, fixed intermediate capabilities and workforce requires investment to utilize and scale AdvM technologies. Inherently, LOE 2 is similar to LOE 3 and enables greater self-sufficiency with enhanced capabilities and a different workforce. LOE 2 will take inputs from LOE 3 to facilitate implementation and commercial production in LOE 1.

Strategic Goals

Enhance organic depots with improved, flexible, and agile capabilities for fabrication and repair.

- Minimize the logistics footprint by manufacturing parts on-site/on-demand.

Utilize efforts in modernizing the organic industrial base to achieve scalability.

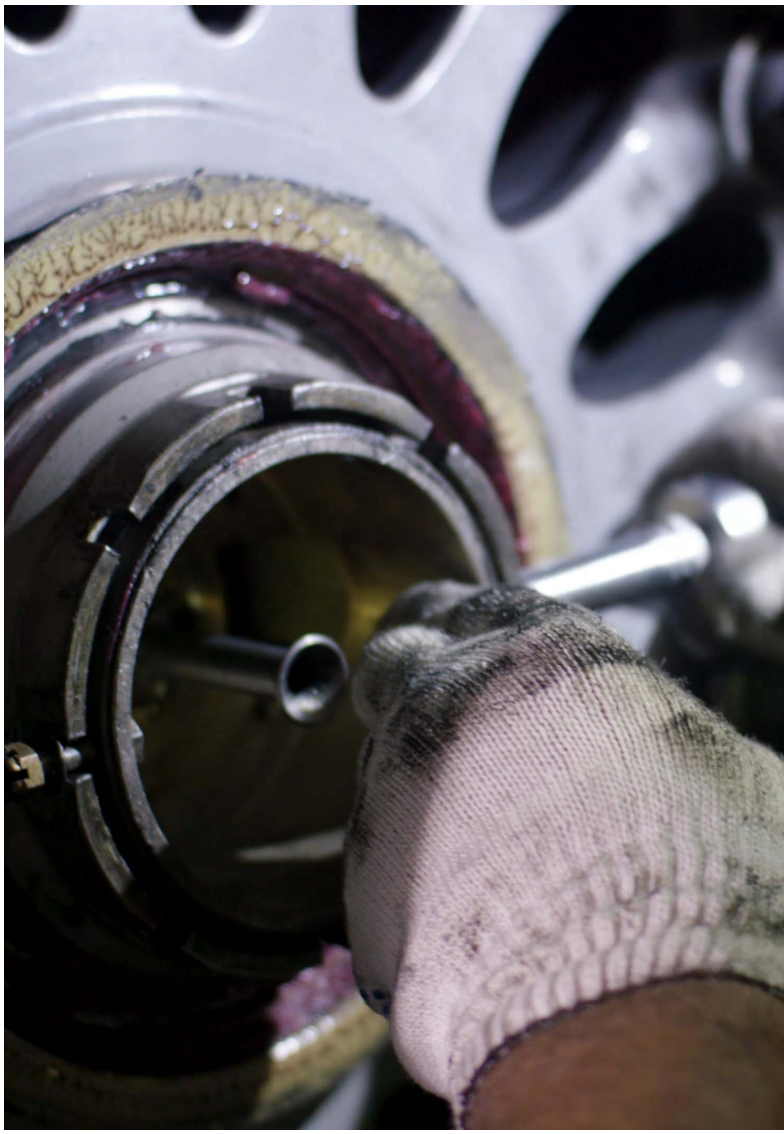
- Shipyard Infrastructure Optimization Program (SIOP).
- Naval Aviation's Fleet Readiness Center Infrastructure Optimization Plan (FIOP).
- Marine Corps Organic Industrial Base (MCOIB) to scale.

Implement digital manufacturing practices to enable the adoption of advanced manufacturing technologies like Additive Manufacturing (AM), Robotics, and Digital Twins.

Implement open architecture to facilitate future technology maturation and scaling.

Integrate shop floors to link qualified manufacturing designs with machinery, monitor equipment health, and enhance workflow connectivity.

By adopting a holistic approach that includes diversification of suppliers, resilient supply chain management, strategic stockpiling, investments in domestic capabilities, and robust cybersecurity measures, Naval forces can navigate these challenges and ensure the continuous advancement of our technological capabilities. Through collaboration with commercial manufacturers, the DON's organic depots can achieve a paradigm shift in their capabilities, ensuring a responsive and technologically advance infrastructure to support the nation's defense needs.



LOE 3. Strengthen Warfighter Self-Sufficiency for Mission Success

Contested logistics, the complex interplay of supply chain vulnerabilities and geopolitical uncertainties, has emerged as a critical factor in shaping the success of modern armed forces. Deployable Organization and Intermediate Level AdvM capabilities are essential components for enhancing the agility and self-sufficiency of our Naval forces. AdvM offers rapid response capability to sustain operations in austere environments.

The DON's deployed AdvM LOE will include mobile intermediate capabilities in addition to organizational capabilities. These units can be deployed to forward operating bases, contingency locations, or disaster-stricken areas, providing on-demand manufacturing support. This LOE will accept more risk, target point of need opportunities, and take full advantage of warfighter innovation. While efforts in LOE 2 and LOE 3 can also be permanent changes, all efforts should leverage the flexibility of temporary changes for in-service platforms.

Strategic Goals

Deploy and scale suitable AdvM technologies for use by Sailors and Marines in situ where tactical opportunity is high and technology risk is low.

Optimize configuration management processes, including control and documentation, for on-demand use of AdvM parts, enabling operational self-sufficiency.

Promote coordination among Depot Level, Intermediate Level, and Organizational Level AdvM activities to enhance AdvM capability support for forward deployed users.

Establish essential support infrastructure to advance the maturation of AdvM technology.

Link machinery directly to qualified fabrication and repair designs/instructions.

Implement software for real-time monitoring of equipment health.

The integration of organizational and intermediate level AdvM capabilities represents a strategic investment in military readiness, offering a dynamic and resilient solution to the challenges of modern warfare and contingency operations.

CROSS-CUTTING ENABLERS

There are five primary cross-cutting enablers that must be addressed to successfully deliver advanced manufacturing technology at scale across all lines of effort. These are governance, manufacturing technology maturity, standards, digital architecture, and workforce development.

Governance

Advanced Manufacturing governance is essential for the DON to maintain its strategic advantage, enhance operational effectiveness, and ensure the security and readiness of naval forces. Upon identification and development of program requirements, the governance structure for AdvM management and oversight will adhere to the Secretary of the Navy Instruction 5000.02G (SECNAVINST 5000.2G) guidelines within the Defense Acquisition System and the Adaptive Acquisition Framework.

A Senior Advisory Group (SAG), consisting of Flag Officers, General Officers, and Senior Executive equivalents will oversee the development, program acquisition, and sustainment policies and procedures as prescribed within SECNAVINST 5000.2G.

Manufacturing Technology Maturity

The DON recognizes the imperative to enhance its technological and manufacturing maturity, particularly in the context of advanced manufacturing. This strategic focus is essential for maintaining a competitive edge, ensuring operational readiness, and addressing the evolving challenges of maritime security.

- **Mission Critical Technologies**

  Identify and prioritize mission critical technologies within the DON that can benefit from AdvM, such as shipbuilding, aircraft and ground production, and maintenance. The "innovative" technology must demonstrate necessary performance specifications and potential improvements in their given application.

- **Technology Adoption**

  Strategically incorporate AdvM technologies to facilitate rapid prototyping, on-demand production, and the creation of complex, lightweight components.

- **Technology Transfer Initiatives**

  Collaborate with research institutions and private-sector partners and leverage existing transition pathways to facilitate the transfer of cutting-edge technologies into AdvM processes.

- **Cross Training Initiatives**

  Facilitate cross-training initiatives to foster a multidisciplinary workforce capable of integrating technological advancements.

- **Agile Implementation**

  Adopt an agile approach to quickly adapt to emerging technologies, ensuring that the DON remains at the forefront of AdvM capabilities.

By embracing AdvM technologies and enhancing manufacturing maturity, the DON can achieve a transformative impact on its operational capabilities, efficiency, and resilience in the face of evolving maritime challenges.

Standards

Solidifying standards and specifications is crucial for ensuring consistency, interoperability, and quality in AdvM processes within the DON. Standardization facilitates collaboration with industry partners, streamlines supply chains, and enables the seamless integration of innovative technologies. AdvM must be procurable. Standards will define key performance parameters, align qualification/certification requirements, and communicate to the DIB what the minimum viable product is.

- **Quality Assurance**

  Develop and adhere to uniform production standards to guarantee the quality and reliability of fabricated components across different naval assets while implementing certification processes that ensure compliance with industry and international standards, fostering trust in the reliability of AdvM techniques.

- **Data Security and Intellectual Property (IP)**

  Standardize and streamline IP rules, regulations, and guidance related to the employment of AdvM, to inform new system procurements and in-service operation and maintenance activities. Implement robust cybersecurity standards to protect sensitive data related to AdvM processes, safeguarding IP and preventing unauthorized access. Establish protocols to protect IP generated through AdvM fostering innovation while safeguarding proprietary technologies.

Standards and specifications in AdvM will promote efficiency, interoperability, and continuous improvement of its manufacturing capabilities. Through a commitment to standardization, the DON can navigate the complexities of AdvM while ensuring the highest levels of quality and reliability in its naval assets.

Digital Architecture

A digital architecture for AdvM within the DON is crucial for optimizing operational efficiency, enhancing agility, and maintaining a competitive edge in the evolving landscape of naval capabilities. A cohesive approach to digital architecture in AdvM, seamlessly integrated with Logistics Information Technology (LOG IT), not only enhances efficiency but also fosters a responsive and adaptive production ecosystem.

We must embrace, resource, and scale digital infrastructure to securely develop, access, manage, transmit, and share data in addition to incorporating machine learning and other digital tools into production and logistics processes. Digital databases should be accessible by Allied nations and/or coalition forces as well as appropriately authenticated small businesses, start-ups, and non-traditional businesses.

- **Cybersecurity and Data Protection**

  Establish and adhere to robust cybersecurity protocols to safeguard sensitive AdvM data, IP, and critical infrastructure from cyber threats.

  Implement data encryption measures to protect information during transmission and storage, ensuring the confidentiality and integrity of digital assets.

A well-defined digital strategy for AdvM is essential for the DON to harness the full potential of technological innovations, enhance operational capabilities, and maintain a responsive and adaptable AdvM infrastructure in the maritime domain.

Workforce Development

Workforce Development is a crucial component in leveraging AdvM technologies within the DON. A skilled and adaptable workforce is essential for optimizing the benefits of AdvM processes, ensuring efficient operations, and maintaining naval readiness. Establishing and formalizing education, training, and certification processes across the DON workforce is critical to ensuring we retain the competitive edge over our adversaries.

- **Skill Enhancement Programs**

  Implement specialized training programs focused on AdvM technologies, including additive manufacturing, robotics, and digital fabrication processes.

  Encourage cross-training initiatives to equip naval personnel with a diverse skill set, enabling them to adapt to the multifaceted requirements of AdvM

  Establish AdvM-specific Navy Enlisted Codes and associated A-Schools to standardize DON AdvM warfighter training.

- **Collaboration**

  Establish partnerships with universities and technical schools to create tailored programs that align with the evolving needs of AdvM in Naval operations.

  Foster internship and apprenticeship programs to provide hands-on experience for students interested in pursuing careers in AdvM for the Navy.

  Collaborate with research institutions to facilitate the transfer of cutting-edge technologies and research findings into Naval manufacturing processes.

  Create innovation hubs within Naval facilities to encourage collaboration, idea exchange, and continuous learning among Naval personnel and external partners.

- **Adaptive Learning Platforms**

  Develop online training modules that allow Naval personnel to access learning resources at their own pace, facilitating continuous skill development.

  Incorporate simulation-based training programs to provide a risk-free environment for personnel to practice and refine their skills in handling AdvM equipment.

- **Leadership Development**

  Offer leadership development programs that focus on understanding and leveraging AdvM technologies, ensuring effective management of teams and projects.

  Cultivate a culture of innovation through leadership training, empowering leaders to champion new ideas and technologies within the Naval manufacturing ecosystem.

- **Continuous Learning Culture**

  Provide avenues for continuous professional development, such as workshops, conferences, and industry events, to keep the workforce abreast of the latest advancements in AdvM.

  Establish mentorship programs to facilitate knowledge transfer between experienced personnel and those newly entering or transitioning within the field of AdvM.

- **Recognition and Rewards**

  Implement recognition programs that celebrate and reward outstanding contributions to AdvM, encouraging a culture of excellence and innovation.

  Introduce performance-based incentives to motivate and reward personnel for achieving goals related to the successful implementation of AdvM technologies.

Workforce development is a dynamic and ongoing process that aligns the capabilities of the DON with the rapidly evolving landscape of AdvM. By investing in the skills, knowledge, and adaptability of its workforce, the DON can ensure that it remains at the forefront of technological advancements and maintain a competitive edge in maritime operations.

The DON can achieve a transformative impact on its operational capabilities, efficiency, and resilience in the face of evolving maritime challenges. Through technology maturation and commitment to standardization, the DON can navigate the complexities of AdvM while ensuring the highest levels of quality and reliability in its naval assets. Well-defined digital architecture and workforce development plans will allow the DON to harness a responsive and adaptable AdvM infrastructure in the maritime domain.

CHALLENGES

The DON's pursuit of an AdvM strategy signals a commitment to innovation and technological superiority. The technology journey has been long, which is an indication of the complexities inherent in the transition.

The fundamental nature of AdvM offers entirely new approaches to materials, design, and fabrication at the component and system level. While the opportunities are significant, there is limited performance data on which engineers rely to make risk-informed decisions. The progression of AdvM in the DON has been slowed by the necessary laborious planning and stringent approval processes to certify and qualify technically acceptable parts/components/processes. Success in AdvM relies on the DON's ability to expand its knowledge in low-risk, low-complexity areas and scale to higher risk components and systems as confidence increases.

AdvM involves a convergence of various disciplines, from engineering and technology to data analytics, supply, logistics, and intellectual property. Fostering effective collaboration among diverse teams and stakeholders within the DON is a challenge that requires breaking down silos, promoting open communication, and aligning different expertise towards shared goals.

Incorporation of AdvM technologies into existing naval processes without disruption to ongoing operations requires meticulous planning, resource allocation, and culture change. The DON operates within a framework of regulations and standards that may need to adjust given the introduction of new capabilities. In parallel, the transition to AdvM often necessitates upskilling and retraining the existing workforce. Reskilling personnel to operate and maintain cutting-edge technologies is a time-consuming and resource-intensive process. A delicate balance must be achieved to upskill the workforce while adjusting regulations and standards to incorporate this technological evolution.

The ability to share qualified designs and fabrication processes at speed and range is a benefit of AdvM that also introduces new cybersecurity vulnerabilities. Protecting sensitive information, intellectual property, and critical infrastructure from cyber threats becomes a paramount concern. The DON must ensure development of robust cybersecurity measures and intellectual property protections to safeguard advanced manufacturing processes.

The complexity of the global supply chain introduces challenges in sourcing and securing the necessary materials and components for AdvM. Geopolitical tensions, trade disputes, and disruptions, as witnessed in recent times, can impact the reliability and resilience of the supply chain, affecting the Navy and USMCs ability to meet manufacturing objectives.

While the DON's AdvM strategy holds the promise of transforming naval capabilities, it is crucial to recognize and address the challenges that may impede its seamless implementation. By proactively navigating these hurdles through strategic planning, workforce development, collaboration, and adaptive governance, the Department can position itself at the forefront of technological innovation, ensuring a resilient and technologically superior naval force for the future.

CONCLUSION

The establishment and implementation of a DON AdvM Strategy marks a transformative step towards enhancing the Navy's and USMC's capabilities, resilience, and competitiveness. By embracing cutting-edge technologies such as additive manufacturing, advanced machining, and rapid prototyping, the Navy and USMC can overcome traditional manufacturing limitations, bolster supply chain resilience, and adapt to the demands of a rapidly changing global landscape.

Furthermore, in the context of a contested logistics environment, the DON AdvM strategy provides a robust framework for mitigating risks associated with global supply chain disruptions. By leveraging AdvM technologies, the Navy and USMC can establish a more self-reliant and adaptable production ecosystem, ensuring the uninterrupted availability of essential components and systems.

In essence, the implementation of this strategy signifies a commitment to excellence, efficiency, and resilience within the DON. By fostering a culture of innovation and embracing AdvM, the Navy and USMC not only modernizes its manufacturing processes but also lays the foundation for sustained success in an ever-evolving defense landscape. As technology continues to advance, the DONs proactive approach to harnessing the power of AdvM will undoubtedly contribute to its mission success, technological leadership, and overall readiness for the challenges of the future.

The DON, in embracing AdvM, must now focus on strategic next steps to fully optimize its capabilities, ensure sustained innovation, and maintain a competitive edge in the rapidly evolving maritime landscape.

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