

Washington State's Path in the Global Aerospace Race

AeroNex: Empowering Collaboration and Innovation in Aerospace

Competitiveness

While the global marketplace faces challenges, it is important to recognize that Washington's longstanding dominance as an aerospace manufacturing cluster is primarily being challenged domestically. The emergence of other regional aerospace and space industry clusters in the Southeast, Texas, and Midwest present significant competition to Washington's position. These clusters have rapidly developed manufacturing infrastructure to cater to these markets.

In recent rankings, the Puget Sound region, once considered the premier location for aerospace manufacturing, has fallen from the top spot to seventh place. The emerging clusters offer enticing advantages, including lower taxes, substantial business recruitment incentives, right-to-work laws, and a lower cost of living. A notable example is Texas, which is wholeheartedly embracing aerospace business growth, with median home prices approximately half of those in Washington. Furthermore, Boeing has shown a keen interest in investing in this region of the Southwest for its defense business.

These factors highlight the urgency for Washington to address the challenges and regain its competitive edge in the aerospace industry. It is crucial to take immediate action to strengthen the state's aerospace manufacturing sector, attract investment, and retain its position as a leading aerospace hub. By addressing the factors that have propelled the rise of other clusters while leveraging Washington's unique strengths, the state can reclaim its position at the forefront of aerospace manufacturing and secure a prosperous future.

Technology

Most technology experts now estimate that our knowledge base is doubling every 13 months, fueled by advancements in digital design, AI, advanced materials, and hydrogen power. This rapid transformation is driving innovation across global supply chains and reshaping the industry.

Space. The urgency to act is clear. Washington has been an active part of the space industry since the 1980's and is home to leading companies including Blue Origin, SpaceX, Amazon, and Aerojet RocketDyne. The state's strong history in commercial aerospace and technology have fed a booming ecosystem of space entrepreneurs, but steps must be taken in order to better support start-ups and early-stage businesses.

UAS. Washington has many critical success factors already in place to support UAS and advanced air mobility (AAM) developments as follows. In order to take advantage of these assets as UAS and AAM markets grow, the state has to act now with a focus on the future.

- an urban population core situated along the Puget Sound
- numerous lakes, open space and existing infrastructure in Central and Eastern Washington for testing and demonstrations
- the availability of a highly skilled technical workforce
- a history of experience and success in aerospace

Emerging Technologies. Washington has emerged as a global leader in the realm of "green" aviation, epitomizing its position as a capital of environmentally conscious industries. Notably, Moses Lake has witnessed groundbreaking milestones with the first-ever test flights of both electric and hydrogen-powered aircraft. This progress is further bolstered by the industry's impending transition to **sustainable aviation fuels**, underpinned by initiatives like the Innovation Cluster Accelerator Program (ICAP), specifically Sustainable Aerospace Technologies and Energies (SATE). The emergence of advanced air mobility systems and the rise of clean tech in both air and land vehicles contribute to the growing demand for infrastructure improvements and expansions at airports, further propelling the state's aerospace industry forward.

To remain competitive, it is imperative that we continue investing in our infrastructure, workforce, businesses and technology. These investments will enable us to capitalize on the opportunities presented by emerging technologies and maintain our position as a leader in the aerospace industry.

Time is of the essence. Washington must seize the moment, align its efforts with the rapid pace of technological change, and make strategic investments in its manufacturing infrastructure. By doing so, we can ensure our competitiveness and secure a prosperous future in the dynamic aerospace industry.

Two foundational needs, impact all of airport and aerospace segments—workforce and a support system for innovation.

Workforce

The aerospace industry requires a diverse and skilled workforce to meet the complex demands of the sector. To address the growing demand for skilled professionals, the industry emphasizes initiatives that promote science, technology, engineering, and mathematics (STEM) education. These initiatives aim to inspire and train the next generation of aerospace engineers, technicians, and innovators. Similarly, a continuous supply of skilled technicians will be needed to maintain production at all levels. Unfortunately, the current labor shortage is anticipated to continue for many years into the future, especially for those skilled in technical positions.

Workforce development in aerospace is critical to ensure a thriving and sustainable future. As the industry continues to evolve and innovate at a rapid pace, so too must the workforce evolve to maintain its ability to meet business needs. At the same time, companies must recognize the value of building a diverse work environment and find ways to create a strategic competitive advantage through sustaining an inclusive culture. The priority for industry is to recruit, retain, and develop a highly skilled and adaptable workforce that can meet the industry's evolving demands.

For Washington's aerospace sector to remain competitive and regain its place as the most competitive option for business, developing a future-ready workforce must be a top priority. The accelerating rate of change makes it challenging to keep up. Nationwide, by 2030, 2.1M manufacturing jobs could go unfilled if employers do not address the skills gap. Ongoing automation will create more demand for workers to acquire additional skills. In fact, half of all employees will need reskilling by 2025.

- **Statewide Workforce Development Strategy and Advisory Committee**
Create a roundtable to develop a comprehensive statewide Workforce Development strategy (stop piece-mealing fragmented solutions)
- **Regional and Micro-Workforce Training Centers**
To offer rapid deployment IRC training options to meet immediate and long-term critical skills needs (could be part of innovation center)
- **Improve Workforce and Education Relationship**
Emphasizing the necessity of K-12 STEM education and career pathways is vital to establish a robust talent pipeline for higher education and trade programs.

The reality is that we are currently experiencing a talent shortage, and we can no longer afford to delay our response. The time for action is now.

Infrastructure

Advanced air mobility (AAM) presents a solution to address the frustrations of commuting to airports, reducing emissions, and alleviating highway gridlock. However, major airports need infrastructure upgrades to support AAM, including charging stations for future AAM craft and transitioning to electric aircraft.

Rural airports are struggling due to shrinking rural communities, but they can leverage their less congested airspace for flight testing and attract drone-related activities, revitalizing their financial situation. Additional hangar space is in high demand, providing a potential revenue stream for rural airports.

The urgent need for additional hangar space at rural airports presents a critical opportunity to generate revenue and support their financial sustainability.

Co-locating business parks near airports can optimize land use and address the need for manufacturing infrastructure. Federal funding opportunities exist for airport infrastructure improvements, especially for small airport hubs, but many facilities lack the staffing and resources to fully take advantage of these programs. A centralized clearinghouse or outreach efforts could support these facilities in applying for grants.

The Solution

Bringing it all together—the Innovation Network

The overarching objective is to establish a robust innovation network that will strengthen Washington state's Aviation and Aerospace Industry, improve airport infrastructure, and enhance its competitiveness to unlock new market opportunities. This network will serve as a catalyst for driving innovation, attracting emerging technology companies, and securing investments from both private and public partnerships. Simultaneously, it will prioritize the training and development of the current and future workforce, ensuring they possess the necessary skills to thrive in the industry.

AeroNex: Empowering Collaboration and Innovation in Aerospace—an innovation network

