



**KNUDSEN INSTITUTE**  
for Applied Research on Surge Theory

# **ASYMMETRIC SURGE CAPACITY**

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# Asymmetric Surge Capacity

Ares and Plutus are Blood Brothers. War and economics are interdependent. Armed conflict consumes all of the factors of production: land, labor, capital, and entrepreneurship.<sup>1</sup> In contrast, a nation's abundance in the factors of production is secured, seized, and enhanced by military might. Military power consists of an intricate combination of tools or capabilities that provide the ability to control and defend key manmade and natural terrain, and enable causing damage to an adversary's personnel, equipment, and resources. A linear approach to producing defense capabilities would suggest that the country with the largest defense budget and largest Gross Domestic Product would produce the best capabilities and employ military power the most effectively. However, history and current events indicate there are nonlinear aspects of the interaction of a country's factors of production and military effectiveness.

Achieving a competitive advantage on the modern battlefield requires considering the cost per capability, ability to mass produce a capability, and the human capital required to adapt a capability in the smallest amount of development cycles. Asymmetric Surge Capacity is a country's ability to network and incentivize decentralized manufacturing and human capital to produce defense capabilities that are cheaper, more scalable,

and more adaptable than an adversary's capabilities. Preparing and employing Asymmetric Surge Capacity requires tools that provide situational awareness of a country's manufacturing and human capital, systems to coordinate development and production, and commercial teams of military practitioners that can drive development, testing, and implementation at the pace of conflict.

## An example of an economically inefficient approach to warfare

In 2011, the New York Times published a report estimating that the 9/11 terrorist attacks cost the United States \$3.3 trillion while Al-Qaeda spent less than half a million dollars to conduct the attacks.<sup>2</sup> Ninety-four percent of the costs to the United States included expenditures on homeland security, war funding, and future veterans care.<sup>3</sup> The US military spent on average \$400 per gallon of fuel while conducting operations in Afghanistan.<sup>4</sup> This expenditure ignored the 962 million barrels of crude oil in the Amu Darya Basin in Northern Afghanistan, which the Chinese have invested \$49 million to develop.<sup>5</sup> And over two decades after the 9/11 attacks, the United States continues to spend over a million dollars on each single period of darkness raid to capture or kill terrorists that live off a few dollars a day and live without indoor plumbing.

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<sup>1</sup> Ronald Findlay and Kevin H. O'Rourke. *Power and Plenty: Trade, War, and the World Economy in the Second Millennium* (Princeton University Press: 2007), 247.

<sup>2</sup><https://archive.nytimes.com/www.nytimes.com/interactive/2011/09/08/us/sept-11-reckoning/cost-graphic.html>

<sup>3</sup> And this report's estimate is significantly undervalued because it does not incorporate another

decade of operations in Afghanistan and the US withdrawal from Afghanistan.

<sup>4</sup><https://thehill.com/homenews/administration/52568-400-per-gallon-gas-to-drive-debate-over-cost-of-war-in-afghanistan/>

<sup>5</sup> <https://www.voanews.com/a/afghan-oil-production-jumps-with-49-million-chinese-investment-/7473728.html>

## An example of an economically efficient approach to warfare

Russia is projected to spend 10.8 trillion rubles (\$109 billion) on national defense in 2024.<sup>6</sup> That is 61 percent the size of Ukraine's Gross Domestic Product.<sup>7</sup> By embedding military practitioners with Ukrainian defense tech companies and manufacturers, Ukraine has caused \$8 of damage for every \$1 spent on a drone.<sup>8</sup> In mid-September of 2024, Ukraine employed indigenously designed and manufactured one-way attack drones to destroy between 2,000 and 10,000 tons of Russian munition stockpiles.<sup>9</sup> In this paradigm shift, a \$150,000 unmanned surface vessel can cripple a \$3.4 billion Destroyer.

## Strategic Framework of Asymmetric Surge Capacity

Entrepreneurship can overcome production limitations of land, labor, and capital when it comes to developing and employing military capabilities. In an increasingly multi-polar world marked by competition between great powers, the strategic and operational cost of an economically inefficient approach to warfare is high. The cost is high because the world is highly interconnected, and this produces positive nonlinear outputs when the factors of production are combined well for military means, and it produces negative nonlinear outputs when the factors of production are combined poorly. These nonlinear outputs occur because competition

and conflict are a continuous cycle of gaining an advantage in capability and position while denying an adversary an advantage of capability and position.<sup>10</sup> This cyclical nature of competition rewards adaptation and volume.

On the modern battlefield, the most effective defense capabilities are cheap, scalable, and adaptable.

- Cheap makes a capability expendable.
- Scalable means an actor can mass produce the capability.
- Adaptable means the capability is resilient to competitive cycles of measure and countermeasure, and competitive cycles are rapidly decreasing from months and years to days and weeks.

The capabilities that have the greatest impact (i.e., the ability to mass effects) are produced by companies with control or access to a strong manufacturing base and resilient supply chain. Government developed products are increasingly ineffective because they are inefficient to manufacture and unable to scale. This has implications for the domestic defense industry, enabling partners and force projection.

Domestic defense industry:

- The foundation of any useful capability starts with understanding

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<sup>6</sup> Maria Senegovaya. *Back in Stock? The State of Russia's Defense Industry after Two Years of the War* (CSIS: April 2024), 4-6.

<sup>7</sup> <https://www.focus-economics.com/countries/ukraine/>

<sup>8</sup> <https://www.economist.com/interactive/science-and-technology/2024/02/05/cheap-racing-drones-offer-precision-warfare-at-scale>

<sup>9</sup> <https://www.forbes.com/sites/davidaxe/2024/09/21/ukrainian-drones-just-blew-up-2000-tons-of-ammo-in-southern-russia/>

<sup>10</sup> Grant T. Hammond. *The Mind of War: John Boyd and American Security* (Smithsonian Books: 2001), 4-6.

the manufacturing and supply chain available because there is no reason to create a bespoke product if it cannot be manufactured in high volume and at a low cost per unit.

- Solutions that consist of generic hardware with open source or highly adaptable software are more useful over time.
- Government developed products are increasingly useless because they are inefficient to manufacture and scale.

much quicker than the US defense industrial base because of a higher sense of urgency, understanding of the environment, and logistics.

- Key planning factors for partner operations now include the ability to transfer technical knowledge, a partner’s connection to the global supply chain, indigenous manufacturing capacity, indigenous engineering capacity, financing for start-ups, and technical operators and trainers (see Figure 1).

**Enabling Partners:**

- Understanding, networking, and influencing a partner’s industrial capacity and indigenous technology development is more effective and efficient than trying to produce solutions in the United States and ship to partners.
- Partners in crisis and conflict areas can complete development cycles

**Force Projection:**

- Global economic interconnectedness creates both a maneuver and logistics corridor for modern foraging.
- Commercial entities can both create understanding and shape an environment for military force projection at a threshold below overt military signature.

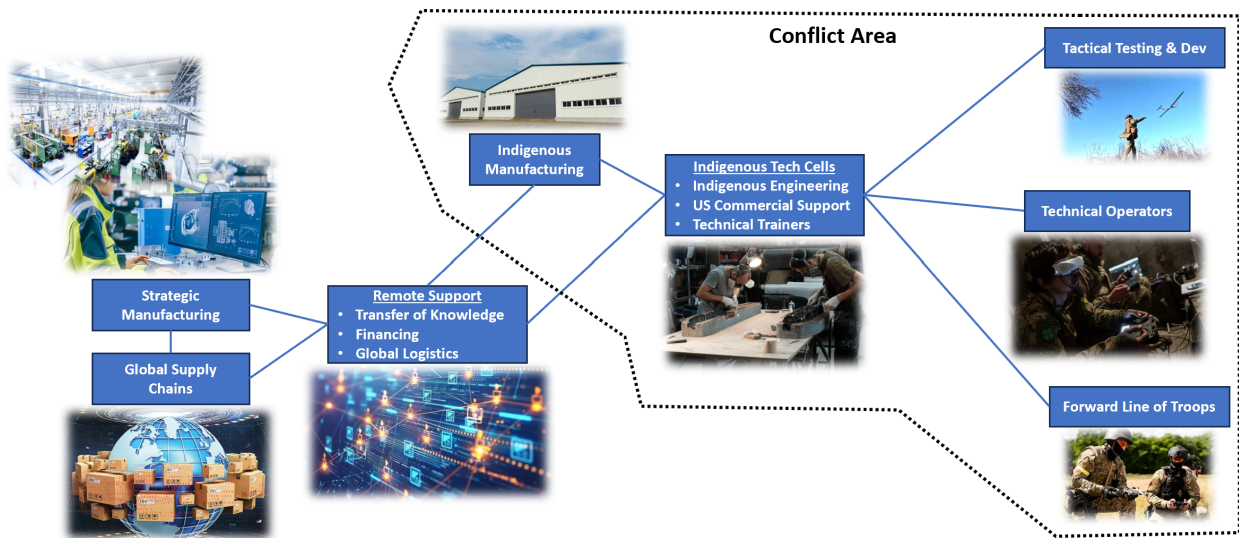


Figure 1. Inspiring Indigenous Tech Cells Concept

## Drone Component Digital Marketplace: A Step Towards ASC with Robotics

To meet the demand from the warfighter, the Defense Robotics Industry needs a means to incentivize Drone Component Manufacturers to increase production rates and to deliver these components at the pace of conflict. There is a need to develop a suite of analytics tools built specifically to find and examine Drone Component

Manufacturing from the perspective of the Defense Robotics Industry and then broker the order of drone components to enable the development of cheap, scalable, and adaptable drones for the warfighter. This suite of analytics tools should autonomously gather, refine, and synthesize data into clear insights about manufacturing capability. The goal is to produce an enterprise-level tool that supports the development and employment of drones to meet the needs of the warfighter (see Figure 2).



Figure 2. Concept for Drone Component Digital Marketplace

## About the Author

Phil Divinski is an entrepreneur and veteran with a deep passion for solving national security challenges. With 16 years of service in the joint special operations community, he completed eight combat deployments and five contingency operations, focusing on counter-terrorism, sensitive activities, and integrated deterrence. His military career emphasized leveraging cutting-edge technologies to execute tactical actions with strategic impact, spanning regions such as CENTCOM, INDOPACOM, EUCOM, and SOUTHCOM. Holding advanced degrees from Johns Hopkins University and the United States Military Academy, Phil transitioned from the military to innovate U.S. defense by enhancing the integration of emerging technologies in crisis zones. He is the founder of Jed Doc LLC, which supports defense tech companies by providing tactical expertise to accelerate development and deployment cycles.