

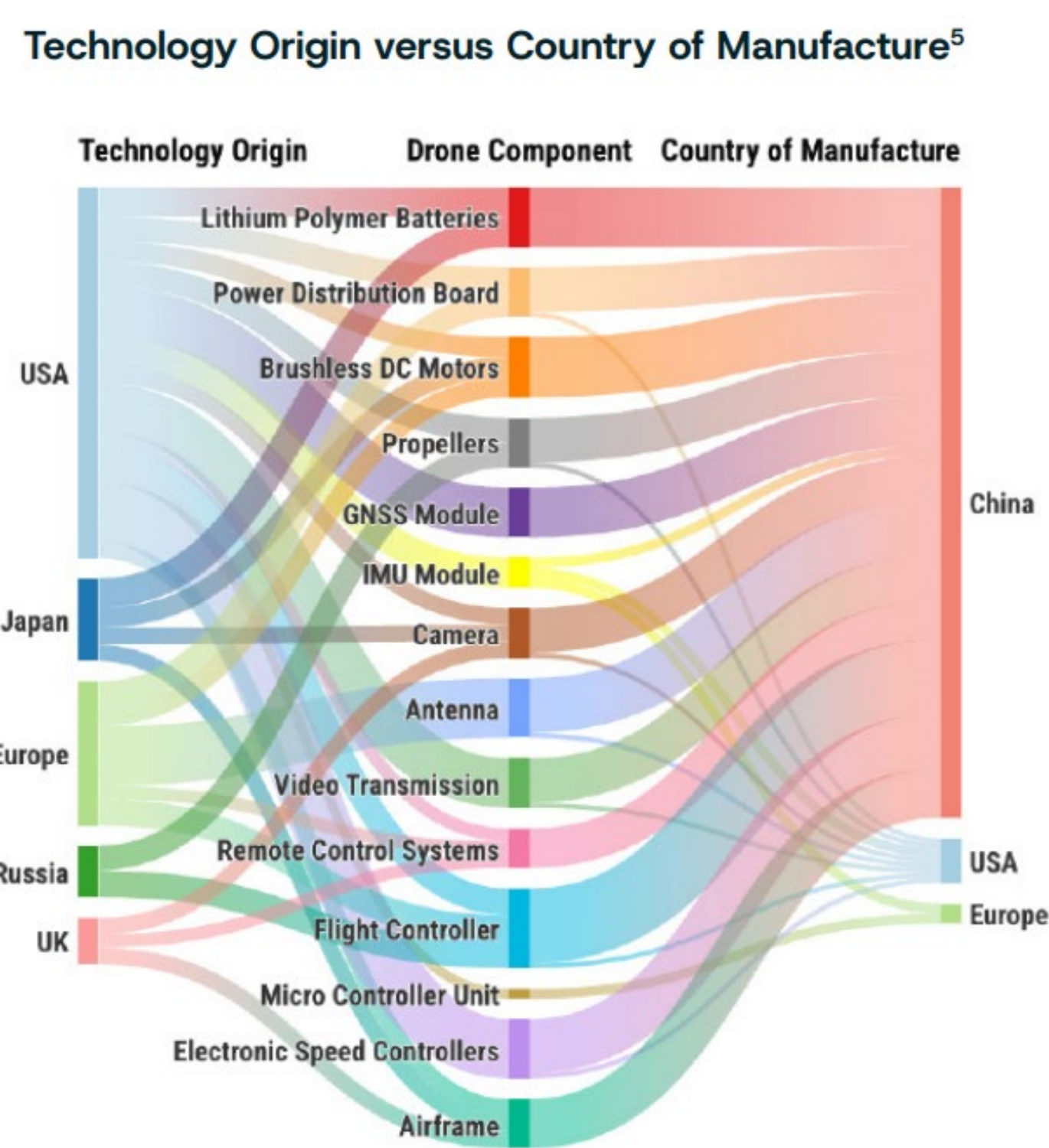
Abstract

- The United States small unmanned aerial systems (sUAS) industrial base faces vulnerabilities due to heavy dependence on Chinese components and limited domestic manufacturing capacity relative to near-peer competitors. Future conflicts demand rapid drone production at scale; the U.S. must identify optimal platform investments and develop mass production capabilities that meet operational tempo requirements. Ukraine’s transformation from defensive to offensive drone operations demonstrates the strategic importance of domestic manufacturing—Ukrainian forces have maintained supply continuity by producing drones locally rather than relying on imported completed platforms. The research examines the composition and supply chain origins of current Blue sUAS platforms to provide leaders with insights to strengthen U.S. drone manufacturing capabilities. Throughout the research, it is apparent that key critical components could prove a detrimental impediment due to geographical dependencies while operating in a contested environment. Ultimately, research recommendations point to the need to incentivize the industry to ensure preventive measures that allow the DoD to begin building a drone stockpile.

Methods

This research uses qualitative and analytical methods:

- Interviews
 - Skydio
 - Red Cat
 - Neros
 - BotBlox
 - American Lithium Energy
 - Defense Innovation Unit
- Onsite observations
 - Skydio
- Analysis of relevant publications.



Results & Impact

- Current supply chains for attritable drones are bottlenecked on component parts like batteries, GPUs, and sensors.
- Weak and vague demand signal to American drone industrial base impedes technological progress.
- By identifying the most appropriate drone platforms for the warfighter, the demand signal can be refined.
- With focused demand signal, American drone companies can appropriately source their materials to build the drones that the warfighter needs the most.

Future Research

- What issues are related to the scalability of component manufacturing in the U.S.?
- What actions would incentivize corporations to build the facilities that would be large enough to make one million drones per year?
- Timelines associated with a full export ban on American and American allies in relation to how long it would take to manufacture enough parts domestically.



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