AI Defense Start-ups

By

Raphael Chiswick

As the recent war in Ukraine makes abundantly clear, unmanned aerial vehicles, or drones, are firmly established as a key tool of modern warfare. Since the Russian invasion of Ukraine in 2022, both sides have made massive technological advances in their drone capabilities in what is essentially a drone production arms race. The Ukrainian government, however, started to take an alternative route in the development and advancement of their tech by forging mutually beneficial relationships with small artificial intelligence (AI)-focused defense companies across Europe.

As it stands, Ukraine cannot rely entirely on aid packages from Europe and especially not the US who, under Trump, is taking a much more careful role in European conflict. So far, support for Ukraine from the international community is limited, costly, and dependent on repayment either in natural resources or as the United Kingdom said, "the extraordinary profits on immobilized Russian sovereign assets."

There are certain things which, due to their higher cost, Ukraine must receive from aid deals with foreign governments, such as missile systems and larger manned vehicles. These more expensive items must be produced by larger defense contractors as they have greater access to raw materials and a larger production budget. UAVs, however, can be produced as effectively by smaller companies which are able and willing to provide the Ukrainian government a better deal financially. Over the past few years, a German AI company, Helsing, has filled an important role in providing affordable drone systems to the Ukrainian military. Four thousand reconnaissance drones, designed and manufactured by Helsing, are already operational in Ukraine, and a recent deal was struck to provide 6,000 of their new HX-2 attack drones.

The HX-2 attack drones are similar in design to the Russian Lancet drone, produced by Russian aerospace giant ZALA, but come with a few key advantages and innovations. The HX-2 is technologically advanced and able to avoid signal disruption, a feature which can transform drone capabilities on the Ukrainian battlefield. The engagement range is also far higher, at 100 kilometers (km) compared to the Lancet's 40–60 km. Helsing is the developer of an AI software which allows the drones to travel on missions in a swarm, where many are piloted by one individual, allowing for incredibly destructive capabilities.

The key advantage of a company like Helsing, over a larger aerospace company with a wider range of products, such as ZALA, is the significantly lower production cost, which Helsing offers. Helsing has plans to increase output, building "resilience factories" across Europe, which allow for countries to carry out domestic production.

The Ukrainian government clearly spotted some of the advantages in giving smaller defense companies the opportunity to develop new and innovative products. Brave1 is an initiative run by the Ukrainian government, where investors, engineers, defense companies, and military experts are able to meet to address some of the gaps and issues that Ukraine faces on the battlefield. The idea is to fix issues and fill gaps as fast as possible, and so far, it has been successful. The Ukrainian government incentivizes both smaller and larger technology companies to innovate by offering them a shot at a lucrative government contract.

Another similar program aimed at kickstarting innovation in the European defense industry is the Darkstar Coalition. Listed as one of the partners of Brave1, Darkstar is a team of European tech start-up owners and investors who joined forces to boost European defense. Darkstar hosted two boot camps, where small tech start-ups demonstrate their creations and compete for the winning prize: cash to expand their operations. A third boot camp will take place in Spring of 2025, with a total of €1.5 million awarded to the two most successful companies. Even companies which do not win the funding will benefit from attending, as they are given the opportunity to carry out field

testing, network with other companies, gain technical advice, and potentially receive funding externally from other interested attendees. The success of the boot camps demonstrates the previously underutilized talent and innovative ability in Europe in sectors such as engineering, robotics, AI, and cybersecurity. When incentivized and supported, these smaller start-ups can have a real impact on the war in Ukraine and European security more broadly.

It is not just defense manufacturing companies that are stepping up to meet the changing requirements of the Ukrainian government, but also AI programming companies such as Swarmer are also innovating. Swarmer is a company that creates drone swarm programs with huge capabilities in modern warfare. It is also a company which is consistently present at Brave1 tech summits, meeting with investors and Ukrainian military officials.

As the war enters a new phase, with reduced support from the US and the prospect of limited support from Europe, stretching the Ukrainian defense budget as far is it will go will become even more of a priority. This is where these smaller defense and tech start-ups will thrive. Whilst giants such as Lockheed Martin, BAE, or Airbus typically fill a majority of the orders during long-term conflicts, Ukraine recognized the power in allowing smaller, newer, more nimble defense technology companies to innovate.

Raphael Chiswick is an independent author. Views expressed are his own.