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Europe's Other Arms Production Problem: "New Defense"

KEY MESSAGES

- **"New Defense," akin to "NewSpace," challenges the traditional defense industry with innovative, agile, software-first companies**
- **Lack of European equivalent to US tech giants raises concerns about strategic credibility**
- **European technology sector's military assistance to Ukraine remains limited compared to the US**
- **Europe's New Defense sector is critical for future military capabilities and strategic credibility**

The European Union (EU) released its "European Defence Industrial Strategy" (EDIS) on March 5, 2024, two years after the start of Russia's full-fledged invasion of Ukraine (European Commission 2024). One of EDIS's priorities is to steer EU member states and their arms industry towards more ammunition production and cooperative procurement. EDIS is the latest iteration of a long list of EU arms industrial policy plans and initiatives, which began in the 1990s and started concrete implementation in 2016 (Béraud-Sudreau and Pannier 2021).

Given the urgency of the war, EDIS focuses on ammunition production. The EU and its member states have been increasing ammunition production since February 2022, which is the immediate priority for Ukraine. However, European countries and their arms industries face another arms production issue: fostering the emergence of "New Defense" companies. Indeed, the defense market has transformed into what has been called "software-defined defense," where emerging technologies play a pivotal role (Soare et al. 2023).

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This shift in the foundations of military power puts traditional European arms companies (such as Leonardo, Dassault Aviation, and Rheinmetall, to name a few examples) in a "sandwiched" position. From the top down, technology giants lead innovation on information technology developments. Technology conglomerates (such as Alphabet, Amazon, Apple, Meta, or Microsoft) have more financial clout than the largest arms producers and hold the innovation advantage when it comes to, for instance, cloud computing or artificial intelligence (AI). From the bottom up, more agile start-ups entering the defense market are challenging traditional players.

The contribution of technology companies to a country's military capabilities has become visible with Russia's war against Ukraine. However, these contributions come predominantly from US-based firms. Have European "New Defense" companies provided military assistance to Ukraine? If not, does this reflect a lack of New Defense players in Europe?

This paper first describes the transformations in the arms industry under the effect of "New Defense," relying on previous research and using the example of the US technology sector's involvement in the war in Ukraine. It then tries to map whether European New Defense players were involved in the war in Ukraine like their US counterparts. It finally offers policy conclusions for European policymakers to strengthen strategic autonomy in this regard.

HOW "NEW DEFENSE" IS TRANSFORMING THE TRADITIONAL DEFENSE INDUSTRY

Emerging technologies have not only transformed the modern battlefield but also challenged the traditional setup of the arms industry, with the emergence of a "New Defense" sector. New entrants in the defense market have played a crucial role in assisting Ukraine against Russian aggression. However, the New Defense companies assisting Ukraine are mainly American. This leaves open the question of the state of play of New Defense in Europe.

Industry representatives Ek and Enders (2022) defined New Defense as "*well-funded defense technology companies*." To elaborate, the expression "New Defense" is borrowed from the concept of "NewSpace." According to Brockmann and Raju (2022, 4), "NewSpace" "*refers to new entrepreneurial businesses or start-ups in the global space sector, as well as the shifting dynamics of the sector's commercialization and the new business practices that these companies embrace.*" A similar approach can be applied to the defense sector, with the twin phenomenon of the militarization of emerging technologies and of disruptions in the business model of traditional defense companies – especially in the US. For the same authors, NewSpace "*signifies the diversification of actors and activities in the global space industry*," notably with the increase of private actors in the sector, both

conglomerates and start-ups (Brockmann and Raju 2022, 5). Again, the same observations apply to the defense sector. Another characteristic of NewSpace that Brockman and Raju (2022) identify also helps in understanding New Defense: innovation comes mainly from the private sector outside of the traditional defense companies. Ek and Enders (2022) also identified the difference in corporate culture as a key divide between traditional arms manufacturers and New Defense actors. They consider that "*New Defense companies are software-first, they pay for their own R&D and employ fast, agile and iterative development practices*," in contrast to traditional defense entities.

The existing literature has identified the transformations at play in the US arms industry. Dunne and Sköns (2021) studied the growing role of commercial technology companies in the US defense market. They gave the examples of Google, Microsoft, and Amazon, which increasingly gained contracts with the Department of Defense (DoD). They also cited the cloud computing sector, where civilian companies have become providers for military customers, rather than the traditional arms companies. These tech giants challenge arms manufacturers, not necessarily by taking their market share for military hardware (e.g., main battle tanks), but rather by preempting new market segments through supplying services where the traditional arms companies are not the first movers.

In the media, The Economist (2023a) described the other facet of the New Defense phenomenon, which also challenges arms producers: the creation of start-ups that challenge the traditional contract and business model, as in NewSpace. The Economist article refers to Anduril Industries, established in 2017. This company initially developed military software and entered the autonomous vehicles market segment. The Economist (2023b) further showed how this start-up challenges the missile sector with a reusable missile offering. Other US firms that could qualify as New Defense include Scale AI and Shield AI, Epirus, or Fortem Technologies (PR Newswire 2023).

These examples are US-based. Knowledge on how New Defense is developing in Europe remains limited, although some reports have warned about the growing gap in emerging military technology developments between the US and Europe. Barberini (2020) noted that about 90 percent of information and communication technologies firms are based in the US and that their role will be increasingly critical for military capabilities. Going more in-depth, Soare et al. (2023) showed that the UK's Ministry of Defence has relied on Palantir and Anduril for some of their military AI and machine learning programs. According to these authors, France seems to rely more on local firms (Capgemini, Atos, Thales, and Sopra Steria) for their future capabilities. Their report concludes that the transatlantic gap between the US and Europe in this field exists but is still "bridgeable" (Soares et al. 2023, 41). This gap can be further illustrated by looking at New Defense actors' provision of military assistance to the Ukrainian armed forces in their fight against Russian aggression.

EUROPEAN PRIVATE SECTOR INVOLVEMENT IN UKRAINE: WHERE ARE THE NEW DEFENSE PLAYERS?

Regarding the two sides of New Defense as they sandwich the traditional arms industry, where does Europe stand? Looking first at the top-down challenge, which relates to tech giants' involvement in defense markets, the lack of European equivalents there is already widely acknowledged (Pannier 2023). From the bottom up, the transatlantic gap in the New Defense ecosystem is highlighted by the case study of New Defense firms' involvement in the war in Ukraine.

Russia's war of aggression against Ukraine has been the topic of much analysis when it comes to the role of new technologies on the battlefield (see notably Franke and Söderström 2023). Such reports focus on what technologies and equipment are used by the warring parties. But the question of who provides such systems and software is less prominent. One notable exception is a study by Bresnick et al. (2024). These authors listed 18 technology companies that have provided military assistance to Ukraine: Amazon, Apple, Capella Space, Cisco, Clearview AI, Cloudflare, Fortem Technologies, Google, Mandiant (now part of Google), Maxar, Microsoft, Oracle, Palantir, Planet Labs, Primer, Recorded Future, SpaceX, and Tesla.

Whereas US companies' role can be clearly identified, what about the European technology sector's military assistance to Ukraine? If European countries were on the frontline, would they need to rely on these US-based businesses like Ukraine did? As the debate heats up on how and whether Europe would need to defend itself in the event of a second Trump presidency (Rhode 2024), the question of which companies provide such military-relevant services and where they are based is topical.

Most European arms manufacturers have been involved in the wake of their government's weapons donations to Kyiv, for shipments, spare parts, training, maintenance, etc. European companies listed in the world's top 100 largest defense firms (Liang, Scarazzato et al. 2023) include Rheinmetall of Germany and BAE Systems of the UK. Both have established local entities to support Ukraine's industrial war effort. Although such firms have developed their own software and emerging technology businesses, they represent the traditional arms industry rather than New Defense.

At the other end of the spectrum, European civilian businesses involved in the telecommunications sector have also helped Ukraine. For instance, French telecom companies Orange and SFR allowed free calls to Ukraine, while Bouygues and Free implemented

lower prices. These do not qualify as military assistance, however.

A series of think tank reports from the Defense AI Observatory (DAIO) explored the industrial landscape for the defense-AI sector. Three reports covering the European countries of France (Martin and Liversain 2023), Germany (Borchert et al. 2023), and Denmark (Graae 2023) give lists of companies who sell AI tools destined for defense uses. This provides a sample of New Defense actors in Europe, around 40 entities in all. However, of those 40, it was possible to find only three that had provided military assistance to Ukraine.

Helsing is the most prominent example. This German company specializes in AI services for military applications. It contributes, for instance, to the Future Combat Air System (FCAS) program co-developed by France, Germany, and Spain. In Ukraine, Helsing incorporates AI programs into Ukrainian uncrewed aerial vehicles (UAVs) (Ministry of Strategic Industries of Ukraine 2024), possibly among other activities (Meaker 2023). Another example, also from Germany, was the company Traversals. This AI start-up created a "Ukraine Dynamic Frontline Monitoring (UDFM) service to record military events in the war zone by reading and analyzing publicly available data" (Traversals 2024). In France, the company Preligens uses AI to analyze satellite imagery, although it is unclear from open sources to what extent the company's services are provided directly to the Ukrainian authorities (Preligens 2023; Chatham House 2022).

Outside of the defense-AI domain, the European private sector is also involved when it comes to UAVs. In France, Delair sent 150 drones to Ukraine, based on a contract from the French government (Delair 2024). The Danish firm Nordic Wing was also contracted by Ukraine's partners to supply its Astero ISR system (Nordic Wing 2024). The Portuguese company Tekever provided surveillance drones to Ukraine (Intelligence Online 2023; Gosselin-Malo 2023). In Germany, Quantum-Systems supplied reconnaissance drones to Kyiv (Quantum-Systems 2022). Drone warfare has been critical in the war so far; however, this type of technology is not comparable to the services provided by the 18 US companies identified in Bresnick et al. (2024).

The European tech sector's military assistance to Ukraine thus remains limited when compared to the US. The question remains as to whether the still relatively small scale of the New Defense sector in Europe creates a liability when it comes to military capabilities. Looking at the services provided to Ukraine by the 18 US firms mentioned above, how critical are they? Does their absence or limited scale in Europe undermine European strategic credibility? To a large extent, the assistance provided relates to cybersecurity (Amazon, Cisco Technologies, Google, Mandiant, Microsoft, Oracle, Recorded Future). Apple and Google deactivated their maps services, but it is unclear how critical this is from a military perspective. AI-related assistance came more clearly from Clearview AI, Palantir, and Primer.

Some of these companies are traditional telecommunications providers, but the list notably includes key players that could be seen as part of the New Defense trend, either the technology giants (GAFAM) or specialized newcomers (Palantir, Planet Labs, Fortem). It also includes, as frequently noted in the reporting on the war, Elon Musk's companies Space X and Tesla. According to Bresnick et al. (2024), some of services they provided to Ukraine had military value. For instance, Clearview AI supplied facial recognition services, Fortem Technologies deployed counter-UAS systems, Maxar provided imagery, Palantir assisted with targeting, and Space X famously deployed the Starlink satellites.

When it comes to some of the more defense-focused companies such as Palantir, Europe tries to build credible competitors. For instance, in France, Thales and Athos established the joint venture Athea, under government steering, to try to build a French equivalent to Palantir (Dèbes 2021). However, this effort appears to be domestically focused rather than a European-wide collaboration. European initiatives that try to foster such collaboration include the EU Defence Innovation Scheme (EUDIS).

POLICY CONCLUSIONS

New Defense is a diversification of private actors involved in the defense market and a transformation of businesses and procurement practices in the arms industry. Currently underway on both sides of the Atlantic, the process is more advanced in the US, as evidenced by the emergence of new key players in the defense sector.

The contribution of New Defense to military capabilities has become more obvious with their implications for the war in Ukraine. However, this concerns mostly US companies, not European ones. Although this paper relied on a limited sample, it was challenging to uncover military assistance from European technology companies to Ukraine, aside from a few examples (Helsing, Traversals, Preligens). It could be that deeper research would yield more results, or that some European New Defense companies are active in Ukraine but that this does not surface in open sources.

Lagging behind in the New Defense sector creates several challenges for Europe. First, the lack of an equivalent to GAFAM or Space X could create military vulnerabilities. While this absence is the focus of debates on European digital sovereignty (Madiega 2020), the gap this generates in terms of military capabilities deserves more focused attention. Second, the limited number of New Defense companies in Europe undermines the continent's strategic credibility. These new players will become part of the backbone of military

capabilities on future battlefields. As efforts to ramp up ammunition production are underway, the New Defense arena should not be forgotten.

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