Application 7.19

THE CONSORTIUM FOR THE DEVELOPMENT OF THE EUROFIGHTER TYPHOON COMBAT AIRCRAFT

Belén María Moreno Cabezalí
Lydia Murillo Ramos
Universidad Rey Juan Carlos

Airbus Defense and Space, a division of Airbus Group (Germany and Spain), is a global leader in the aerospace and defense sector, renowned for its innovation and advanced technology. A clear example of its leadership is the Eurofighter Typhoon, a multifunctional fighter jet developed in collaboration with BAE Systems (United Kingdom) and Leonardo S.p.A. (Italy) through the Eurofighter GmbH consortium. This project illustrates how international cooperation between these countries can overcome the challenges of a highly competitive market and meet global demands for advanced defense. This consortium was established in 1986, demonstrating the effectiveness of collaboration in creating cutting-edge technology since then.

Cooperation in the Eurofighter project has generated remarkable economic efficiency, allowing significant economies of scale and improving operational performance. Given that each Eurofighter has an approximate value of 100 million euros, these economies are crucial in the defense industry. The strategic alliance facilitates the sharing of costs and risks, optimizing resources and reducing unit costs. Furthermore, the cooperation takes advantage of economies of scope and generated synergies, allowing each partner to contribute their specialized expertise in various areas of the fighter jet's development and production, from avionics to weapons systems, thus contributing to the overall cost reduction of the project. Learning economies also play a fundamental role, as the continuous exchange of knowledge and practices among partners accelerates innovation and improves productivity. With each increase in production, experience accumulates, optimizing processes and further reducing costs.

From a strategic standpoint, the collaboration allows Airbus and its partners to access advanced resources and capabilities that would be difficult to obtain independently. BAE Systems develops a significant portion of the airframe and some electronic and avionics systems, while Leonardo S.p.A. is responsible for the flight control system and other electronic systems. This cooperation significantly strengthens the consortium's market power, which is essential in a competitive global market. By consolidating as a major player in the market, the consortium has managed to achieve an adequate size to effectively compete with rivals such as Boeing with the F-18 Super Hornet and Lockheed Martin with the F-35 Lightning II. This strategic alliance optimizes access to new markets and enhances the consortium's ability to compete globally.

The cooperation in the Eurofighter project offers several advantages. It combines operational efficiency with the flexibility of an international agreement, allowing partners to focus on their areas of specialization. This reduces costs and improves project management. The collaboration provides access to advanced technologies and specialized expertise crucial for developing a high-performance combat aircraft. Additionally, sharing risks and resources helps mitigate uncertainty and reduces the time needed to achieve strategic objectives. The long-term relationship among the partners also brings stability and decreases the risk of project failures.

However, the Eurofighter project could face several significant challenges in its cooperation. One of the main potential issues is the loss of autonomy, as the need to coordinate among the involved companies could limit the ability to make quick and effective decisions. This lack of power delegation could imply additional costs in time and money, given that crucial decisions regarding development and production would need approval from various actors within the consortium. Increasing organizational complexity could also hinder the development and maintenance process of the fighter jet, complicating the integration of new technologies and upgrades. Moreover, the possibility of divergent interests among the consortium partners could cause conflicts and slow project progress, affecting both efficiency and the overall cost of the aircraft.

These aircraft face demanding operational conditions, requiring frequent maintenance and spare parts whose delivery times can be prolonged. In response to this situation, Airbus is exploring the use of 3D printing to allow end customers to manufacture spare parts directly from CAD (Computer-Aided Design) files within hours or days, significantly reducing wait times that might otherwise extend to several months. To facilitate this innovation, Airbus could implement licensing agreements that would allow end customers to print and assemble Eurofighter components tailored to their specific needs. This alliance would not only accelerate the supply of critical parts but also increase the flexibility and operational autonomy of these customers, thereby improving support for the Eurofighter fleet in service.

In summary, the Eurofighter consortium composed of Airbus Defense and Space, BAE Systems, and Leonardo S.p.A. has demonstrated how international collaboration can become a strategic response and a key mechanism to optimize economic efficiency in combat aircraft development. Despite facing challenges such as loss of autonomy and organizational complexity, innovation in 3D printing for spare parts manufacturing promises to improve flexibility and support for international air forces, highlighting the success of its cooperative and adaptive approach.

Sources:

- https://www.airbus.com/en/products-services/defence/military-aircraft/eurofighter
- https://www.eurofighter.com/

Date of application: July 2024

More applications, short cases and other resources in:
www.guerrasynavas.com/index_english.htm