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MANAGEMENT CONSULTANTS

CRISIS AND STRATEGIC REDEFINITION IN THE AEROSPACE & DEFENSE SUPPLY CHAIN

Since 2020, the Aerospace & Defense industry supply chain has been hit by an unprecedented crisis, heightened by tensions that seem to increase year after year. The COVID-19 pandemic triggered a sudden collapse in demand, followed by a patchy recovery that has not seen production rates return to 2019 levels. At the same time, new constraints have led to a steady downturn in industrial performance, with final assembly lines (FALs) frequently disrupted by delays or shortages of critical parts. This context has generated an environment in which problems add up and inevitably get worse.

Given the multitude of suppliers and the geographic dispersion of production sites, the supply chain in these sectors is particularly complex and faced with volatile demand and a great variety of product configurations. Since 2020, the industrial fabric has undergone major upheavals with mergers, acquisitions, bankruptcies and endless reorganizations reshaping the landscape of subcontractors.

Consequently, despite a backlog of orders offering a record level of visibility, sales in the aviation sector are yet to stabilize at their pre-pandemic 2019 figures. Efeso estimates that late deliveries of parts due to a straining supply chain hampered the 2023 sales of European firms by 25 to 35%.

A SUPPLY CHAIN FACED WITH PROFOUND STRUCTURAL CHALLENGES

Erratic demand forecasts impacting the whole supply chain are one of the main difficulties. The slightest change in production rates or configurations has repercussions throughout the chain, lengthening delays and heightening tension. The failure of certain suppliers—due to solvency issues, shortages of skilled labor, or industrial disasters such as fires—adds to the instability, and the lack of alternatives for certain critical parts makes the situation even worse.

The problems are exacerbated by tight supplies of raw materials, the resulting shortages of parts, and in some cases doubts as to their conformity. The number of concessions is on the rise, and the threat of counterfeit parts, particularly spare parts used in maintenance, is becoming a critical issue.

One negative effect is adding uncertainty to volume forecasts because, the less the commercial aircraft industry is able to meet its deliveries, the more airline operators are retrofitting existing aircraft to extend their service life, thereby “cannibalizing” existing capacities and penalizing the original equipment manufacturing (OEM) market.

Owing to strict aviation regulatory requirements, the complicated change management cycle only adds to the complexity. Each new version of a part must be certified, entailing a long and costly process that hinders any initiative to streamline industrial models. Furthermore, responsibility for the design and definition of industrial processes remains a subject of debate between aircraft manufacturers and their suppliers, slowing down the management of non-conformities and responses to incidents.

The complicated certification procedures required for any new production line and change of industrial process also prevent rapid adjustment to new demands from the market.

IN RESPONSE TO THE URGENCY, WHAT TRANSFORMATIONS CAN FIRMS MAKE TO END THE CRISIS AND SPEED UP PRODUCTION?

The current supply chain crisis in the Aerospace & Defense industry reflects a system that is too complex and too strained to cope with the contingencies of the context today. To overcome the challenges and prepare for a more stable and resilient future, a dual approach is needed, combining short-term crisis management and medium-term strategic rethinking. Improving cooperation across the supply chain, optimizing processes, and integrating new technologies will be the key drivers of the transformation required to accelerate production. To achieve this transformation, the Aerospace & Defense industry should activate several levers, as explained below:

Short-term solution: response in crisis mode

Short-term solutions focus on handling immediate crises and continuity of operations. In times of tension or instability, it is crucial to stabilize production lines to avoid significant delays and downtime. Possible options include temporarily adjusting production rates, implementing agile, responsive processes to meet the fluctuating demand, and strategies for managing potential shortages of critical parts. However, these measures are immediate solutions; they are not enough to guarantee longer-term sustainability and optimization.

Medium-term high value: added disruptive solution

Unlike short-term solutions, disruptive solutions require transformations that run deeper and are often more challenging to make. They demand substantial investment but deliver significant gains in the short and medium term. For example, an overhaul of the industrial model, with optimized production flows and new or automated processes can make a company considerably more competitive.

Improving agility in decision chains

Excellence in design and production adapted to the sector requires strict and complex procedures applied to highly sophisticated products involving many players. Efficiency is often lost in red tape as a result. The entire model must be reviewed and aligned with operations and strategies to guarantee that efficiency. Companies need a structured approach and a clear vision of how they can work with their partners to achieve their objectives, based on a roadmap for implementation.

Reinforcing management and cooperation with suppliers

A risk-benefit analysis of suppliers is also essential, in particular for 'BCC' (Best Cost Country) suppliers. Although they can generate savings on paper, the extra flows and more complex integration they induce can weaken the supply chain. A thorough assessment is therefore needed to improve resilience and reduce risks of shortages or delays.

In addition, for better coordination, improvements in customer-supplier cooperation is needed at each milestone: from design to industrialization through full-scale production. Better cooperation will avoid disruptions or discrepancies between expectations and deliverables, with improvements in the overall performance of industrial projects.

Optimizing industrial investments

The current situation will likely lead to significant capacity-building investments, despite uncertainty over medium-term volumes. However, companies must ensure that they make the right investment and that they will soon reap the expected gains.

Structured approaches are available to guarantee that each investment is not only optimized, but also fully aligned with the needs of the business.

By incorporating cost targets when designing new programs, these approaches help to avoid overruns while securing a long-term return. Costs are factored into each decision concerning design, materials and manufacturing processes, without compromising quality or performance.

After optimizing costs, the focus must be on rapid rollout with the aim of reducing idle periods and ramping-up production lines to swiftly maximize productivity. By reaching their full production capacity faster, firms can soon meet market demand and recover their initial investment costs, thereby improving their Return on Investment (ROI).

Managing and optimizing the extended supply chain

'End to End' (E2E) planning is based on a comprehensive view of the supply chain, from sourcing raw materials to delivering the end product. Disruptions are reduced through anticipation, stock management is optimized and coordination between suppliers, manufacturers and distributors is improved. This reinforces responsiveness, shortens lead-times and optimizes the use of resources. Thanks to greater transparency, E2E planning helps to identify bottlenecks and rapidly take corrective measures to minimize impacts and build a more resilient chain.

Although this approach is already well-known and widely used in the Aerospace & Defense sectors, it can be digitally enhanced to detect weak signals upstream, especially through the integration of recent technologies such as artificial intelligence (AI). A few specialized tools already exist, but their large-scale adoption by all the players in the supply chain still represents a challenge. Data sharing will be crucial to achieve this digital transformation and get the most out of E2E planning.

Guarding against contingencies

Once the supply chain is under control, it must become robust to cope with and swiftly recover from any unforeseen disruptions. Resilience is crucial for business continuity, even in the event of identified risks such as geopolitical issues, resource scarcity and climate hazards. However, a lot of businesses lack maturity in this area and struggle to take the necessary action. They must therefore take a methodical approach, in order to measure and characterize the impact of each risk and develop a comprehensive action plan.

Resilience is not just about prevention. It also includes three other important levels: first, building a real risk culture by continuously training teams to anticipate and effectively manage these situations. Second, it implies an adequate response to crises, with clearly defined roles, responsibilities and protocols. And lastly, analyzing feedback is a vital but often neglected step, to see what works and in what ways the company can improve supply chain robustness in future.

IN CONCLUSION

The profound crisis affecting the Aerospace & Defense industry supply chain since 2020 has brought to light the vulnerabilities of a system that is too complex and inflexible to respond to major disruptions, such as those it saw during the COVID-19 pandemic, as well as geopolitical tension and raw materials shortages. Continued deterioration in industrial performance, repeated delays, shortages of critical parts, and structural upheavals in subcontractor networks have pinpointed the urgent need to fully redefine this industry's strategy.

To meet these challenges and prepare for a more stable future, a profound transformation must be made by improving agility, optimizing investments, and integrating digital technology, including AI. To be sustainable and competitive, the supply chain must adopt a resilient approach, based on prevention, ability to respond to a crisis, and feedback. Increased cooperation between players, data sharing, and effective risk management will become the pillars of a robust supply chain that is capable of overcoming the challenges that lie ahead.

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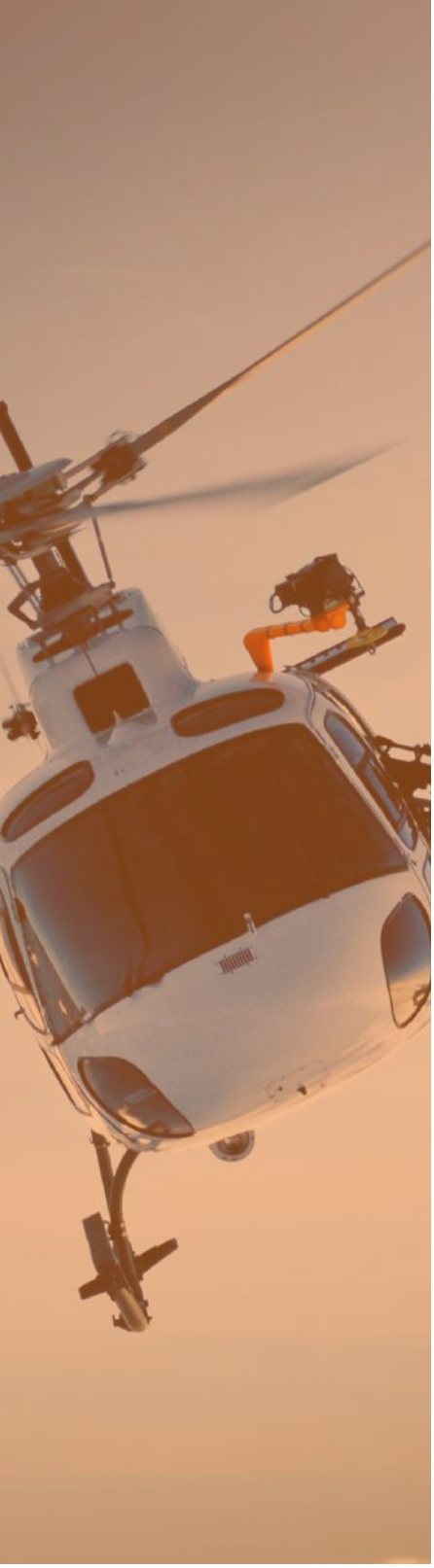

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