Service and Support in Aerospace and Defense: Achieving Operational Excellence
It has been five years since Accenture first explored the capabilities and mindset that aerospace and defense companies would require to assume responsibility from defense agencies for the service, support, and availability of assets in the field. Since then, performance-based contracts have become commonplace, particularly in Western defense agencies and militaries. But much has changed since the mid-2000s politically, economically, and commercially. From force reductions in Iraq and Afghanistan, to the strength of the commercial aviation sector relative to defense, to NATO joint operations over Libya, to the still uncertain impact of the financial crisis on government budgets, aerospace and defense companies face a new set of challenges in deploying and sustaining service and support businesses. The past five years also have seen increased focus on service and support in the commercial sector as new and legacy operators seek to improve fleet availability at lower cost while aerospace integrators and tier-one suppliers look to service and support to fuel top- and bottom-line growth. Service and support remains a significant opportunity for aerospace and defense companies with the right capabilities, culture, and flexibility to capture growing demand in commercial aviation and defense.
The Service and Support Opportunity

Demand for aftermarket services is being driven by diverging trends on the commercial and defense sides of the aerospace market. In the commercial segment, new fleet growth and the replacement of aging aircraft will expand not only the size of the fleet needing to be maintained, but also the composition and deployment of that fleet (Figure 1). The significant fleet growth in emerging markets will strain the existing maintenance infrastructure and skill base of those locations, providing growth opportunities for new providers to establish operations in those markets to sustain the significant number of new aircraft that will be entering service.

In established markets, the arrival of new platforms will provide operators with the opportunity to review their current maintenance arrangements and determine the appropriate balance between in-house and outsourced maintenance services. In that context, the growth of the MRO market is expected to track the median of fleet growth over the next ten years (Figure 2).

Figure 1. Profile of New Fleet Growth and Fleet Replacement

![Figure 1](image1.png)


Figure 2. 2012 Global MRO Forecast Total Value ($US billion)

![Figure 2](image2.png)

The growth of the defense service and support market will be triggered by a trend in the opposite direction: the retention of assets by Western defense agencies as budgetary pressures delay fleet transitions and the introduction of new platforms. Simultaneously scheduling challenges with key new programs such as F35 and A400 will delay the onset of new sustainment opportunities. Aftermarket growth will be slow in defense, but combined with the steady expansion in the commercial sector, the overall aerospace aftermarket opportunity remains strong (Figure 3).

As a higher-margin, long-term, and relatively low-investment business compared with contracting and developing a new platform, service and support contracts hold great appeal. Corporate returns of companies active in the service and support business show why. In Accenture’s review of the financial returns for 20 mid- to large-sized publically traded aerospace and defense companies, seven of the top 10 companies as measured by total return to shareholders focused on service and solutions, whereas only three of the bottom 10 had a service orientation (Figure 4).

While the data appear to reinforce the early promise of the shift to services, we were interested in understanding the competitive essence of those companies that were able to distinguish themselves in service and support. How did they translate global supply chain service and support solutions into return to shareholders? At the most basic level, how have companies structured themselves? What capabilities have they developed to effectively and profitably provide service and support solutions?
In studying high performing service-oriented companies, we found these organizations have focused their operating models on building deep, global expertise in a related set of systems such as propulsion, structures, braking, or hydraulics. When gaps in the portfolio have existed, they have acquired, entered new markets, or both. To serve their customers through these operating models, high-performing companies have made targeted investment in capabilities, particularly data analytics, product data management, customer experience, and supplier management. To date, high performers in service and support have largely been specialized players, focused on key sub-systems. However, larger aerospace and defense companies are slowly building toward deploying comprehensive service and support offerings that align with emerging models for service and support (Figure 5).

Figure 5. The emerging types of service and support models in aerospace and defense

- **Trends**
  - Simple parts transactions will continue among “traditional” carriers
  - Shop for price and speed

- **Service and Support Models**
  - Transactional
    - Low touch customer relationship
    - Spot market shopping
  - Service Supply Chain
    - Parts and service supply chain service to support maintenance operations
  - Technology Model
    - Employ fleet operational and descriptive data to strengthen parts supply chain
  - Asset Total Care
    - Full nose to tail services and support for single aircraft type
  - Total Fleet Management
    - Full management of maintenance services for entire customer fleets

- **Potential Customers**
  - Operators with captive maintenance businesses
  - Militaries with high in-house depot capabilities
  - Operators looking to decrease maintenance footprint while retaining element of control
  - Taking advantage of onboard data sources on new aircraft types entering service
  - Operators in emerging markets that lack mature maintenance and repair infrastructure
  - Seek to minimise operating costs
  - New market opportunities to address desire to fully offload maintenance and support costs

Balancing Structure and Execution Is Key

While many aerospace and defense companies have had striking successes in building financially successful service and support businesses, portions of the service and support market remain relatively untapped. Although high performers have been quite successful in providing service and support offerings targeted at specific components or major sub-systems of a given asset, there are very few examples of companies that have been able to consistently provide total care for a specific asset type, much less reached the holy grail of managing an entire fleet. We have entered into a period in which aerospace and defense companies are building upon technology to service and support key subsystems. To reach the next level, aerospace and defense companies will need to build upon the lessons learned by today’s high performers in how to both structure their businesses and execute in the market (Figure 6).

Figure 6. Excelling in service and support hinges on being adept at both structural and executional dimensions

Source: Accenture
**Structure**

The service and support business requires aerospace and defense companies to structure dynamic, global supply chains. Companies must be able to defend their core businesses, successfully enter new markets, and identify what truly distinguishes them from their competitors. The aerospace and defense companies that have found financial success through focusing on service and support share common structural characteristics that have helped them outperform their peers. These characteristics include the following:

- Specializing in a defined set of product types and service offerings
- Focusing on the full product lifecycle from design through after-sales service
- Developing a global network of production, service, and support
- Maintaining federated operating models that support the rapid absorption of acquisitions that expand capability and support expansion into new markets
- Maintaining the capital flexibility required to invest in new capabilities and partnerships

These structural characteristics are distinctly suited for capitalizing upon the growth opportunities in aftermarket services. By specializing in a defined and operationally related set of products (e.g., power, avionics, braking, etc.) and related services, these companies achieve a reputation for high initial quality and operational performance while building an install base within which to provide long-term service and support. To do so requires an unparalleled level of product intimacy and understanding that links engineering, design, to manufacturing execution, to as-maintained configurations and usage. This understanding can only be obtained through a corporate structure that encourages the consolidation of product knowledge from across the company—from engineering design, through manufacturing, to field operations.

High-performing service and support companies have also committed to structures that mirror the increasingly global profiles of their customers. Using global networks of their own assets and those of trusted partners, these companies can maintain the in-service levels their airline and military customers require. They also have taken an equally important structural decision to maintain a more federated organizational structure that enables them to move more quickly than their competitors to acquire and divest the assets, companies, and capabilities they need to compete and secure new business.

A select group of tier one suppliers have led the way in building corporate structures that are aligned to high-performing service businesses. They have achieved this by building, and often acquiring, portfolios of companies that provide them with a position across complementary aircraft systems. By developing a corporate structure that permits them to operate at scale across multiple aircraft systems, these companies have placed themselves in a position to compete with OEMs themselves to gain a significant share of the market for aftermarket service and support. The structural scale of these companies in the aftermarket provides a distinct alternative for airline and military operators to OEMs or a selection of smaller providers.

**Execution**

While companies can make structural investments to put themselves in a position to provide competitive and high-margin service and support solutions, they must also possess distinctive capabilities that distinguish them from their competitors and work for their customers. High-performing service and support companies’ focus on the integrated supply chain is reflected in the capabilities they bring to the market. These capabilities combine the people, processes, and technologies required to keep assets moving.

**People**

People are central to making service and support happen. From design engineers to line mechanics, from sourcing experts to logisticians, dozens of roles must work together to keep an asset available and moving. It is thus not surprising high-performing service and support organizations take people seriously. They identify the skills that support the core of their businesses and invest in building those competencies within their organizations. They give particular weight to areas at the heart of service design and delivery such as design, engineering, financial management, analytics, field service, and strategic sourcing. Simultaneously, high-performing service and support companies are unafraid to use partners to support both back-office functions and frontline support functions such as supplier audit and logistics execution.

**Processes**

From sourcing steel to actually turning the wrench during a service event, thousands of individual processes comprise the servicing of an aircraft. Yet there are a few distinct processes that distinguish those operators that have effectively focused on developing service and support solutions. Their focus starts at the beginning, with engineering and product data. Starting at designing products for serviceability and establishing processes to rigorously track product configuration, product data mastery helps companies understand the parts likely to contribute to service events and monitor them through time in service. This focus moves through forecasting of service requirements and the transmission of those requirements upstream to manufacturing and downstream to field service. Lastly, it manifests itself in a rigorous focus on financial performance that evaluates not only the revenue and margin performance of individual service contracts but also of the product and service businesses in which those companies should participate. Our experience shows that companies that have consistently succeeded in providing aftermarket services are also not shy of divesting themselves of existing businesses or acquiring new ones.
Technologies

The selective use of technology ties together the skills of people and investment in the right processes. While individual systems are important, perhaps more important is the ability to share data across the systems that support key process areas. Engineers and field support staff must be able to trace bills of material through their “as-designed” configuration in design tools through their “as-maintained” configurations in maintenance systems. Highly variable spares forecasts must be integrated into and prioritized within highly regular original equipment production scheduling. Performance data from individual assets must be integrated back into those planning tools. Inventory visibility must be extended across global locations, both owned and those of customers and suppliers. Financial visibility must be extended across the multiple entities and businesses that sit within a service-focused company. Contemporary integration tools and analytical engines can provide this visibility, minimize the impact of service events on asset availability, and maximize the financial return of service offerings. The power and capability of individual technologies matter. Connecting those tools and the information they contain to the enterprise may matter more.
Conclusion

There are two distinct camps working to expand their grasp of the aerospace service and support market. From one side, tier one suppliers are working to grow the share and density of subsystems they can "own" on an aircraft. This provides them the flexibility to either work with an OEM as a major subcontractor on support contracts or to have the scale and customers to own and manage contracts themselves. From the other side, OEMs are growing their ability to coordinate and manage complex service and support efforts by providing the parts, data insights, knowledge of the full platform and supplier relationship that only an OEM can provide.

Tier one suppliers built an early lead in aligning to aftermarket services by structuring themselves as federated networks of related product areas and investing in the planning, data management, financial, and analytical capabilities needed to support a services business. Yet as OEMs combine their formidable legacy spare parts businesses and deep knowledge of systems integration with an increasingly integrated set of market-facing capabilities, they are providing an increasingly compelling aftermarket proposition for asset owners and operators. Both tier one suppliers and OEMs understand that success in the aftermarket relies upon both how they structure their businesses and the capabilities they embed within that structure to execute their business plans in the marketplace.

As commercial fleets grow, new aviation markets expand, and budget weaknesses force defense assets to stay in service longer, aftermarket service and support will only increase its importance within the portfolios of aerospace and defense companies. Companies that have committed to aligning their structure and capabilities to serve this market are already demonstrating substantial returns on that investment. Those investments will be tested as more companies commit to meeting the needs of the market today and the growing needs of tomorrow.

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