A Global Support Network for Global Military Aerospace Customers

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Expanding needs

During the last decade, defense forces in both the USA as well as in Europe have continually been dealing with budget cuts and are therefore looking for means to perform their operational tasks in a more efficient way. Especially supporting tasks as higher level maintenance on weapon systems and supply functions are subject to studies for new concepts. Concepts, that are no longer based on the premise that all of the supporting capabilities are to be available within the armed forces itself. At the same time, defense industries are facing less fast growing markets and an increasing competitive environment in which they are forced to develop added values to the products they sell to their customers. Both developments bring defense forces and defense industry closer to each other and take effect on the relation between customer and manufacturer.

Manufacturers now define themselves not merely as manufacturers of aerospace products – the definition is too limiting – but rather as large system integrators, bringing the right mix of products and services to customers in markedly different venues and with markedly different needs.

By evaluating their businesses through the system integration lens related to the new needs of customers, many manufacturers have determined that customer satisfaction will not and cannot be established through timely delivery of superior products. Today, customers evaluate a company not only on the basis of its product quality and capability, but also in terms of the service and support it provides over the life cycle of its products.

In the military aerospace support business, government procurement departments have almost universally adopted product and program management techniques that place appropriate, but not total, emphasis on meeting operational requirements. These experts also want to enhance the value of initial procurements with superior service and support that ensure optimal mission capability in as many scenarios and circumstances as possible, for as long as possible.

In other words, military operators have begun to replicate the expectations of commercial airline managers, all of whom depend not just on safe and reliable aircraft, but comprehensive support systems that minimize downtimes for maintenance and repair. Military operators measure success in altogether different terms, placing a premium on national security considerations, but increasingly they must face similar budget constraints that require program managers to plan and operate with the same value metrics that their commercial airline counterparts have used for decades.

Boeing support concept

Today, more and more manufacturers of military aircraft systems have embarked on development of a support system comparable in every respect to commercial airplane support organizations. One example is the Boeing Company that will utilize its existing support base to establish a Global Support Network, operated by its Spares and Technological Data organization, which has to meet the needs of military customers by utilizing the same value-based approach that has characterized the commercial business for years.
Boeing has a straightforward implementation strategy for the Global Support Network. They will establish front and back office operations that capitalize on the efficiencies inherent in the global presence, efficiencies that will likely improve with the development of capabilities aimed at the military customer base.

The Network's 'front office' is focused entirely on customers. For customer convenience, the company will locate these offices in the business centers of key regions around the world – the locations where customers are likely to do business in a variety of business venues and over a wide variety of product lines.

The 'back office' is where work is done. It will be a re-engineered and sophisticated support infrastructure – with stronger relationships with the already broad and capable supplier base. The support network will also feature, or have access to, the full resources of the company with regard to every technical discipline that contributes to product operation and every support function and process that brings all necessary capabilities together.

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In other words, the network will rely on a two-pronged approach. In the first case, customers want to buy services, with Life Cycle Customer Service (LCCS) that is performance based, with agreed-upon service level commitment contracts, LCCS best value, but not necessarily the low-cost part or unit-level solution. In the second instance, customers buying parts want a transactional retail store that offers a market-based investment in parts, and the intrinsic value of availability. Price sensitivity is a consideration, and customers are using internal infrastructure to shop for parts.

At the 'point of need', requests for parts and services involve customer sales data, usage information and other intelligence that supports fleet management. The 'point of fulfillment' network of suppliers includes quick response for 'used' parts service, forecasting, order processing, warehousing, technical data creation, storage and delivery.

Chinook pilotproject

Boeing is moving forward with this complex effort, starting with a single platform. It selected the CH-47 Chinook tandem rotor transport helicopter to inaugurate the system for several reasons. The Chinook, known worldwide for its exceptional heavy-lift and transport capabilities, is in service with nearly twenty nations on six continents around the world. The international customers operate Chinooks with a high degree of commonality, but they have also incorporated a large number of components and subsystems specific to their individual needs. The Chinook will provide the right balance of volume and specificity to set a rigorous set of test standards for the Global Support Network.

The company has already determined several implications for the Network that will be beneficial to the customers. In particular, customers with small fleets will benefit from the economies of scale inherent in global fleet logistics support systems. By meeting customer expectation on system and process management, the Network will be more responsive and should generate even more long-term efficiencies as the manufacturer consolidate its supplier base by linking greater supplier sales volume with supplier base consolidation around a smaller number of fully qualified vendors who are more ready to establish steady-state business relationships in exchange for larger and more predictable order bases.

The need for the Network has become apparent among our European Chinook operators, all of whom have requested improved fleet support to increase mission readiness. NATO and European Union defense and security requirements have increased steadily in the last decade, and member nations have taken seriously their participation in a variety of missions that have run the spectrum from humanitarian service to peacekeeping through low-intensity conflict up to and including war. In the last several years, the Netherlands, Spain, Greece and Italy, among others, have provided Chinooks for a large number of military missions that have contributed to European security and world peace. These same missions, however, have generated increasing pressure on these nations' Chinook units to provide full-mission-capable aircraft on short notice in a variety of locations and conditions.

Future program

While the program will serve CH-47s initially, it will rapidly expand to provide comparable service to all Boeing military aircraft in the European region, including the AH-64 Apache, F/A-18 Hornet, AV-8A Harrier, KC-135 Stratotanker, and E-3 AWACS.

Operators of all these aircraft will receive top-flight fleet management services, including aircraft and component repair and overhaul, spares management in regional pooled warehouses that provide transfer of existing assets, single point accountability from Boeing as the original equipment manufacturer (OEM) and service and supplier manager, spares use and repair projections, configuration management, technical data management and modifications and upgrades.

Local commercial support providers will deliver many of these services within the Global Support Network, covering every aspect of aircraft life cycles, from planning, to operations, delivery and value recovery. In the future, the customer will make one stop at the Global Support Network to deal with all other service providers, eliminating the duplicative and time-consuming multiple contacts that have characterized support services in the past. Boeing is exploring various combinations of business approaches, from joint ventures with other OEMs, to risk-sharing agreements with major service providers specializing in air frames, propulsion systems and avionics, to traditional supplier and subcontract relationships.

Eventually, several Customer Service Centers will manage regional operations and support worldwide implementation of products and services for our customers. This decentralized, customer-centric approach will be achieved by locating these centers on-site or near the customers' operations, with emphasis on indigenous resources.

Support centers will develop in various strategic locations to provide overall system management, spares warehousing, supply chain management, performance based contracting, repair and overhaul, in-country representatives and training and publications management. The first regional site will be located in the Netherlands to begin, and spares will be moved in country immediately after the U.S. Department of State approves the plan.

The European support center can work off a strong inventory of Chinooks and Apaches. Nearly 150 Chinooks and 130 Apaches are already in service in five European nations and with U.S. Army forces stationed in Germany.

Potential also exists in Asia for a comparable system. Six nations in Asia already operate or plan to acquire nearly 200 Chinooks, and the inventory of Apaches is growing as well. Asia poses several additional considerations, including large distances between operators, less political unity, tax concerns, and the probability of need for local consulting arrangements. Nevertheless, infrastructure in airframes, upgrades, propulsion, dynamics and modifications already is extensive and capable. Plans call for initial efforts in Asia to begin before the end of 2003.

The Network concept maps around a number of best practices that lead the industry. Strategies involve quick market reaction, a move to a customer-centric demand chain, lower life cycle costs for customers, and the ability to execute across organizational boundaries. That ability to execute involves greater planning accuracy and real time location of products and services around the globe, faster responsiveness to new requirements, and timely information.

Group functions

Another way to consider the new organization concept involves group functions. The core team will handle program management, financial management, supplier management, including selection, licensing, teaming and subcontracting, information systems, operations and export compliance located at the Military Aerospace Support level to provide critical mass for accelerated implementation and to ensure consistent practices in every support center.
At the regional control center level, the tasks will be tactical execution, day-to-day decisions, and customer coordination, distribution and warehousing, freight forwarding, transportation, demand forecasting, and other similar services because of the need for daily coordination with other program functions and customers and because this is the right venue for detailed product knowledge. Support center functions include repair and overhaul, engineering services, innovative performance based contracts, warehousing, spares delivery, reliability and maintainability tracking, information technology, training, publications, customer interface, work flow scheduling, subcontract management, all within a control room operation that incorporates supply chain management.

Finally, execution teams, involving a diverse group of employees and contractors from host nations and other countries, will include repair agents, the supplier network, and production shop coordination. Locations will be program specific and at this level the function will carry out traditional back-office functions to leverage existing processes and relationships.

With the Network, regional support brokers will be established to shorten the support pipeline. This effort will move ahead quickly by leveraging existing regional networks of customers and suppliers who offer multiple geographic entry points for customers, increasing customer satisfaction through greater choice of service providers.

Logistics chain

A specific example of the new Network operations in, say, processing orders would involve customer access to an automated system at his operational site, using the Military Aircraft and Missile System parts catalog on the web, or by phone or facsimile machine, to find the part, determine pricing and to trigger a transaction-pull system in Philadelphia at the Spares Control Group. This organization will validate the order, establish a customer profile, correct configuration, and a stock source for allocation and assignment. This center can also track part history, inventory levels, historical performance, metrics, billing, contracts, and financial management. The Group also will link digitally to a regional warehouse, using a Mechanized Spares Management System and Electronic Shipping System. The warehouse will accept the order, initiate parts pick, coordinate shipping transportation and export control, and validate shipping. Outbound shipping then gets the order to the customer with proper documentation, frequently in just a few hours.
Similarly, stock replenishment would be handled by the same systems in Philadelphia at the Spares Control Group, which handles reorder reviews, stock level checks, account transfers, move orders, and process shipping to warehouse trigger. Replenishment will come from throughout the industrial base in the U.S. and worldwide and be shipped to the regional warehouses, which will receive goods, stock and store parts, and provide process receipt notification.

From the start, coordination between regional warehouses and the Centralized Spares Management in Philadelphia will ultimately lead to Application Interface Integration, a fully capable regional management infrastructure in place, with management, processes, communication and information system capabilities, and a regional execution team of service providers who focus on quality and supplier certification.

Globalisation

These developments however, bring forward not only advantages but also risks for military customers. The efficiency results of further globalisation of military support operations are primarily based on economies of scale. The level of dependancy of these global support networks for military forces will strongly increase. In the future, in particular small European countries like the Netherlands will be dealing with more questions of how to fit in their specific requirements (e.g. peculiar configurations) in these support concepts. It's likely that these concepts will dominate more and more the decision making proces regarding the choice of weapon systems and configuration types. And that, on its turn, takes effect on military operations that can be carried out.