



DEFENSE FORECAST: THE TRANSFORMATION OF IN-SERVICE SUPPORT OVER THE NEXT DECADE

KEY QUESTIONS:

1

More global delivery but complexity varies —awareness of how this relates to procurement models will remain critical.

2

The need for a single view—defense organizations and commanders must look for solutions to manage through-life support costs.

3

Buying IT in Defense: IT must be considered a strategic enabler, not a transactional tool.

IFS WHITE PAPER

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DEFENSE FORECAST: THE TRANSFORMATION OF IN-SERVICE SUPPORT OVER THE NEXT DECADE

BY EVAN BUTLER-JONES, DIRECTOR—DEFENSE PRODUCT LINE, AVIATION & DEFENSE BUSINESS UNIT AT IFS

Military assets are indeed getting more complex, but also for some roles, they are becoming simpler. Delivery and support is increasingly globalized and will only continue to be so. In this white paper I look at five changes set to transform the in-service support model for the military, and argue that IT should be seen as a strategic enabler, not a mere transactional tool.

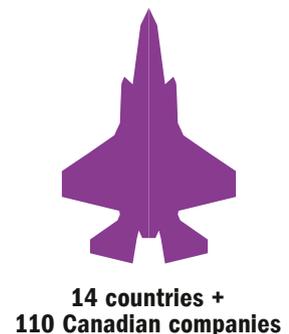
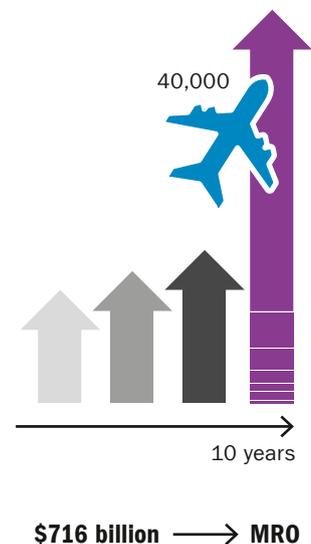
Introducing a new asset into a military force used to be so simple. Manufacturers made equipment, the military bought it, maintained it and, when it became obsolete, they would invest in a new asset. That model hadn't changed since the Crimean war and was in desperate need of reform. Today, many military operators don't maintain their own equipment. OEMs or third-party contractors are maintaining equipment via servitization-based agreements and asset delivery, while support has become a complex portfolio involving military organizations, OEMs, contractors and third-party providers all trying to deliver a single, operationally-focused outcome. Equipment operators see the potential for equipment maintainers to have increasingly profitable and long-term revenue streams. In response, they are forcing the upfront conversation and risk to be borne by the equipment maintainers in agreement to fixing lifecycle costs before they are known.

It's not just the support model that's become more complicated. Equipment is growing in complexity and scale. Just take a look at some of today's military jet fighters, such as the F-35 joint strike fighter, Eurofighter Typhoon and Saab JAS 39 Gripen. The global military aviation fleet is estimated to grow to over 40,000 aircraft in the next ten years. To support this will cost a combined \$716 billion in MRO spend according to the Aviation Week Intelligence Network.

In the next decade, we will witness five major changes in the type of in-service support given to military organizations.

1. More global delivery but complexity varies—awareness of how this relates to procurement models will remain critical

Procurement of key assets has changed. Take fighter jets, for example. Defense forces have gone from a model where each country would manufacture its own jet, to having nations and prime contractors collaborate to develop an aircraft—such as the Eurofighter Typhoon—to a global OEM manufacturing a jet and delivering it worldwide. The F-35 is a perfect example of this new model, with 14 countries contributing to the program so far, including the US,



UK, Australia, Italy, South Korea, Japan and The Netherlands. More than 110 Canadian companies are also supporting the development and production of the aircraft.

But as the trend towards amalgamated and advanced equipment continues, a void is being created at the lower end of the market for affordable, less sophisticated equipment. Suppliers are jumping to fill this void. The highly capable [Textron Scorpion](#) for example, costs \$20m. An aircraft designed for basic support of ground capabilities—such as surveillance and reconnaissance missions—against enemies without advanced air defenses has significant attractiveness, especially as the advertised cost per flight hour is under \$3000.

Looking forward, the support models for these two different lines of equipment are vastly different. The logistics support systems on modern military jets must span a global network of players involved in the total life-cycle of the aircraft, from base and fleet management activities—including maintenance, repair and overhaul (MRO)—to customer support, OEMs and suppliers. On the other hand, less technical equipment involves a simple ‘acquire, buy spares and maintain’ support model.

In-service support providers should gear up for both approaches, or face losing out on missed opportunities and lucrative contracts.

2 Land, Sea and Air Drone proliferation—a growing footprint, but not yet logistically

There is another challenge facing the acquisition of expensive and complex equipment—do defense forces really need to invest in them anymore? Drones and unmanned aerial vehicles are already starting to revolutionize the logistics footprint of military forces.

Efficiency savings can be made by making use of equipment which is versatile, cheaper to procure and doesn’t involve sending a crew directly onto the frontline. For example, Kalashnikov is developing a 20-ton automated tank which can carry both machine guns and anti-tank missiles, negating the need to place crew inside the vehicle on the front line. [In late 2016](#), the British Royal Navy launched a full-scale exercise made up of entirely unmanned equipment. Nine different assets were flying, driving and sailing while interacting with each other.

Sending a defense force forward requires maintenance expertise to be available close to the area of operation. Maintenance personnel need transport, food and shelter, and protection. For large multirole fighters and other complex assets, this requires a large logistics footprint. Adding lower-cost (even disposable) drones to this mix changes the concept of operations drastically, with an equally significant impact on forward supply chains.

Drones come in many flavors, from hand-launched flyers to remote controlled rovers to complex multirole aircraft requiring significant technical sophistication for operational support. Likewise, the acquisition and in-service-support models for military drones are likely to vary as well. On one hand, some drones are valuable and remain in service long enough to require a maintenance and support strategy similar to traditional assets, although they won’t require field maintenance by an operator. On the other hand, certain drones are low-priced and require no maintenance, so supporting them becomes a much simpler logistics and ‘spares’ issue.

5 MAJOR CHANGES IN IN-SERVICE SUPPORT

1. Global delivery with complexity mix
 2. Drone proliferation
 3. Single view needed
 4. From supplier to partner
 5. IT for enablement not just transactions
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NEW SUPPORT MODELS:

Lifecycle maintenance & support v. acquire, buy spares & maintain

Whichever assets defense forces decide best suit their strategy and budget, the procurement, support systems and the world they are deployed in are all facing a period of transition.

3. The need for a single view —defense organizations and commanders must look for solutions to manage through-life support costs

Reforms within defense acquisition have outpaced traditional equipment support models. The increasing dependence of modern defense organizations on suppliers to generate military capability requires defense acquisitions and through-life support contracts to be carefully structured, while at the same time developing and maintaining harmonious relationships between buyers and suppliers.

In order to balance national security mandates with political mandates, equipment must be procured more effectively in the future, with the ability of private sector partners growing to meet the needs of government buyers. The current process—with collaborative focus on risk-sharing but not necessarily cost reduction—isn't sustainable in the long term. Those responsible for the command of these public/private support networks need a better way to manage through-life costs to support major asset logistics. They need support systems to provide them with a holistic view of an asset's supply chain, rather than receiving fragmented information on asset health and readiness from multiple sources. In order to achieve this, timely information needs to be shared across buyer, supplier and maintainer partnerships, which are often comprised of organizations in multiple countries. The question is, do the organizations adopt a policy of data sharing, or can this be done in one large system scaling the entirety of this complex ecosystem?

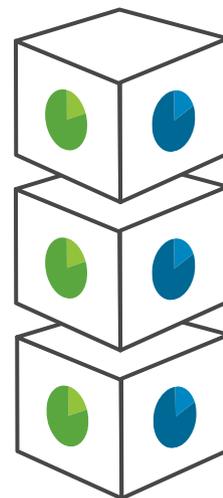
New technologies from the commercial sector may provide answers. For example, blockchain is one technology that could have a serious impact on cross-organizational visibility. Although new and untested in this environment, the technology has the potential to present a 100 percent verifiable, traceable and trustworthy history of an asset's lifecycle in real time. This is particularly important for assets managed through a multi-organization support chain with the complex accountability contracts we see in modern acquisition programs. While the topic of using blockchains for the storage and verification of life-cycle history is worthy of its own thesis paper, suffice it to say that blockchain technology is one of a number of innovations with the potential to disrupt the current state of operations.

4. Globalization means defense OEMs and maintenance contractors will move from government supplier to government partner

The model of how contractors operate is changing. As highlighted in my first point, a smaller number of OEMs are building, delivering and supporting equipment around the globe. Defense budgets as percent of GDP in the West have been shrinking over recent years, while new markets and opportunities are being found in maturing defense forces across the globe.

To quote a recent [PwC report](#), "Defense ministries are relaxing foreign direct investment constraints and asking defense contractors from outside their borders for commitments to their countries that go well beyond traditional short-term, relatively mild offset agreements (contract-related givebacks in the form of minimal intellectual capital transfers and the use of local suppliers,

Those responsible for the command of these public/private support networks need a better way to manage through-life costs to support major asset logistics.



among many other things). The ministries now want broad-based, explicit, and often extensive skills and knowledge transfer to build up their own industrial and military capabilities and diversify their economies.”

Working closely across geographies requires an improved relationship between the OEM and a local contractor or military organization. OEMs need an understanding of security and governance issues country-by-country as well as political transitions which may affect defense policy. In developing countries, there may be a shortage of skills required to deploy and support defense equipment. The social payback of defense spending must also be taken into account, with different public attitudes on military expenditure in every geography.

Success depends on how well OEMs can adapt to a less transactional role. Contractors must develop fresh operating models and be prepared to adapt to remain competitive as markets emerge, shift and develop over the next decade.

5. Buying IT in Defense: IT must be considered a strategic enabler, not a transactional tool

A fresh approach to IT can make cost of equipment, acquisition and support-ability more effective. In all defense acquisitions, IT support for these complex assets is sometimes an afterthought when it should be a priority. Countless examples across commercial transport, resource, and energy sectors—which also involve complex assets with global supply chains—have shown that strategic implementation of appropriate IT enablers have been critical to operational success. Legacy approaches, such as highly customized systems or a combination of work order and supply chain ERP, are no longer sustainable: their inefficiency can cost billions in IT spend.

Spiraling project budgets make headline news. Defense spending is a divisive public issue—a [recent Sputnik survey](#) found citizens in Germany, France, Italy and the UK are polarized on whether their countries should meet the NATO recommended GDP spend of 2 percent. High-profile defense IT projects receive a lot of public scrutiny and, when an integration goes wrong, the results are huge costs and bad press.

A change to IT support models has the potential to deliver greater efficiencies to equipment throughout the whole asset lifecycle. For example, there is potential to save around 10 percent in the cost of ownership of advanced fighters by better managing support and maintenance. Around 20 percent of the cost of operating a military jet throughout its lifecycle is in procurement—IT-support can focus on making the remaining 80 percent more efficient.

In the eyes of in-service support providers, IT needs to be elevated from being a transactional tool to a strategic enabler and help military/supplier/ whoever organizations function more efficiently. Indeed, several of the leading defense contractors have made strategic investment in enabling IT for their in-service support programs.

Those who don't adapt to unlock these benefits risk compromising operational effectiveness, mission success and, in some cases, personnel safety.

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SAVE
10%
on TCO

IN-SERVICE SUPPORT IMPACT

In-service support and logistics providers face crucial decisions about how they operate over the next ten years—reacting to more complex and automated equipment, the acquisition and support of those assets, and the effects of globalization. The providers who read and adapt to these market developments will be the ones that profit the most.

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