



Digitization of the Aerospace & Defense Supply Chain



David Grasso, Executive Vice President, and Chris Brumitt, Vice President, Maine Pointe Aviation, Aerospace & Defense Practice discuss the cultural and technological challenges facing the supply chain as the industry modernizes to create value, drive out cost and improve efficiency.

“The aerospace and defense industry still lags behind other industries in gaining its full benefits.”

“With a Pentagon budget for 2021 at \$740 billion (relatively flat from 2020), modernization projects in this industry have become even more essential.”

Industry 4.0 transformation has become the hallmark of the aerospace and defense industry. One of the most pressing components of this transformation is acquisition reform, which is a top priority for both the Department of Defense and defense contractors. The primary element behind this is the digital supply chain and what it means to a rapidly evolving acquisition process. This push has already brought significant benefits to the DoD, shortening timelines and allowing the warfighter to obtain new systems more quickly and at lower cost.

Yet despite these advances and the initiation of new programs, along with an increased awareness of the necessity of supply chain digitization, the aerospace and defense industry still lags behind other industries in gaining its full benefits. This is largely due to the need for widespread cultural change throughout the aerospace and defense industry and acceptance of the need for new supply chain digitization efforts. This gap between potential benefits and actual implementation of digital supply chain transformation is puzzling since most organizations in this segment do acknowledge the benefits of and have at least some plans in place for digital technology. Concerns often revolve around whether or not such transformations would yield short- or mid-term return on investment and the organization's readiness and ability to embrace the people/data/technology interface needed to make it work.

With a Pentagon budget for 2021 at \$740 billion (relatively flat from 2020), modernization projects in this industry have become even more essential. It is possible to get maximum benefit from existing initiatives such as optimizing supply chain and sustainment to keep shortages to a minimum and building out new capabilities without a corresponding increase in budget. However, to achieve this digitization efforts must be in place to create value, drive out cost and improve efficiency.



“The fact that defense is currently behind the times in modernization and digitization is evident.”

“Incorporating predictive analytics will become one of the biggest trends in transforming defense acquisition and sustainment, starting at the supply chain level.”

“Aerospace and defense contractors are increasingly faced with the imperative of digital transformation, but to address it, they must identify what the digital supply chain means to them.”

“The new tech is without a doubt part of the transformation – but it doesn’t come first.”

The next step in defense’s acquisition reform must be digitization. The fact that defense is currently behind the times in modernization and digitization is evident. One example is the antiquated sustainment model and deficiencies in the end-to-end supply chain which has caused serious parts shortages and grounded aircraft, and has led and led to availability rates that cannot meet mission requirements. The results can be devastating when the warfighter effort is not as efficient as it should be. Reform in this instance would not only result in a cost benefit to the military but greater readiness as well.

The Department of Defense has taken a strong stance in rolling out modernization initiatives and demanding a higher level of digital capabilities from the entire supplier ecosystem, greater security and compliance and less risk, but there remains a gap between Defense’s expectations and the slowness with which prime contractors are rolling them out. This does present a challenge in digital transformation of the supply chain ecosystem, although it is not insurmountable.

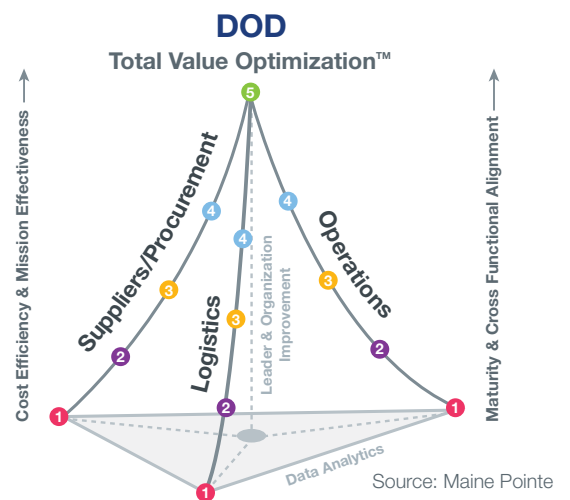
Incorporating predictive analytics will become one of the biggest trends in transforming defense acquisition and sustainment, starting at the supply chain level, and improving operations, logistics and MRO. The the need for supply chain modernization is evident throughout the aerospace and defense industry. Contractors will need to take a closer look at all options to create value within their supply chain including digitization in order to drive cost improvements and remain competitive.

The process of digital supply chain optimization does not, as one might think from the use of the term “digital,” start with technology; rather, it begins with a new business model, based on strong processes and execution fundamentals. The new business model begins with an unprecedented level of collaboration across the entire aerospace and defense ecosystem.

Aerospace and defense contractors are increasingly faced with the imperative of digital transformation, but to address it, they must identify what the digital supply chain means to them, define their business processes, expectations and goals, and take action on digitization.

Digital transformation of the supply chain is built on two fundamental realizations: Transformations are not just about the technology, and they are not just about cost saving. In fact, driving cost savings has created a cost fatigue that the supply chain has a hard time coping with. In aerospace and defense, as is often the case in any industry, there is a “shiny objects” phenomenon, a fallacy based on the mistaken belief that digital transformation is a technology-first proposition, where the desired return will be achieved simply by virtue of putting new tech in place. The new tech is without a doubt part of the transformation – but it doesn’t come first. What does come first is the strategy, the end-to-end buy-in including buy-in from the entire supply chain and a cultural change; the technology is layered on top of that.

More recent innovations may allow the aviation and defense industry to follow a major trend that has long been evident in other industries, and that is, consumer technology finding its way into business. Cloud technologies and platform-based innovations first made dramatic changes in how individuals store and share information. Industry was at first resistant over fears of security, the risk of data loss due to third-party management and a basic aversion to change, but cloud technologies have since become mainstream. The Department of Defense has gone a long way in implementing cloud solutions and demanding them of their suppliers, with projects like GovCloud, FedRAMP and Hybrid Cloud. Questions still remain as to how aerospace and defense partners will effectively balance the need for cloud and platforms against the stringent security requirements typical of Defense contracts. The solution may lie more in private cloud offerings rather than public cloud, which would serve to mitigate much of the risk.





This reality is evident in a shocking statistic from the Global Supply Chain Institute at the University of Tennessee, which states that as few as one in 50 digital transformation projects fail to provide the expected ROI. To further explain the high rate of failure, the GSCI notes the underlying reason is not a lack of technology, or even a lack of understanding how to use the technology. The biggest reason for failure of digital transformation projects is cultural. Effecting change at the people level is always the hardest part of any transformation.

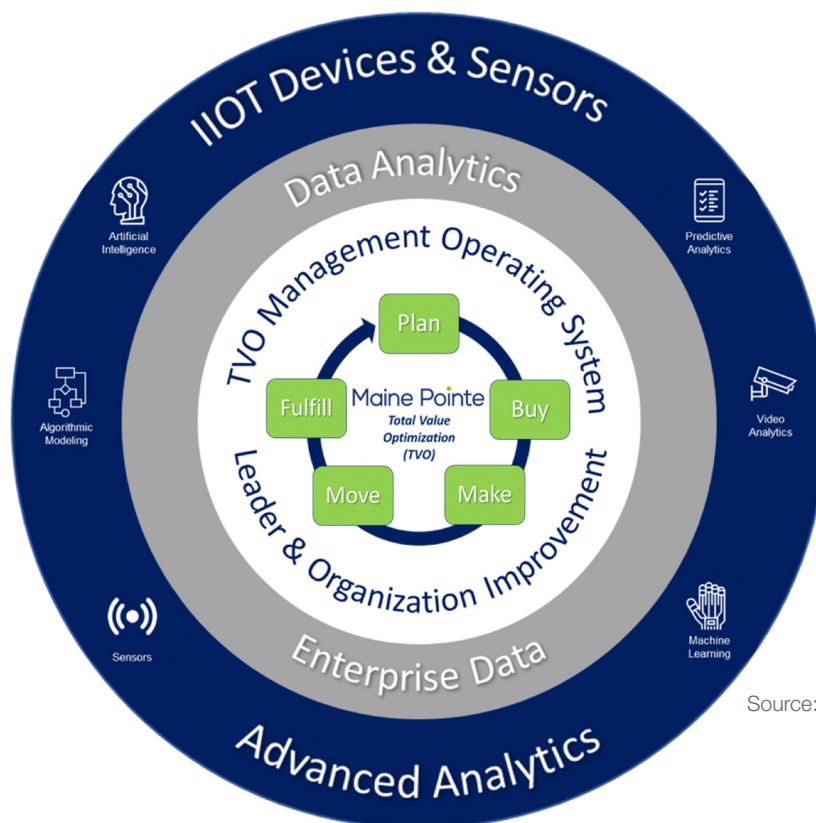
“The biggest reason for failure of digital transformation projects is cultural.”

A new era of digital supply chain in aerospace and defense goes far beyond the obvious benefit of cost savings. While savings is, and should be, a part of this transformation, it is not the only goal, and perhaps not even the primary one. What it is about is creating sustainable growth. This may take the form of developing new businesses in adjacent categories, for example, creating value in core businesses, transforming the organization to be more agile and responsive, better serving the organization’s clients, or in the case of the Department of Defense, better serving the warfighter, improving readiness and being a better steward of taxpayer dollars.

This digital supply chain transformation and the new model that will bring aerospace and defense into the next generation will have to be built not just on new technology but also on new methodologies that drive a different point of view of how the elements of the supply chain interact. The Total Value Optimization (TVO) framework, which is rapidly being seen as the next Lean Six Sigma for the supply chain, enables the sort of tighter focus, success and inclusionary practices needed. Driving a clearer vision of the value that needs to be created, TVO’s strategic approach focuses equally on procurement, logistics and operations and how they are collaborative and integrated to achieve sustainable results along the entire buy-make-move-fulfill supply chain.

“This digital supply chain transformation and the new model that will bring aerospace and defense into the next generation will have to be built not just on new technology but also on new methodologies.”

The importance of advanced technology, Industrial Internet of Things (IIoT) and advanced data analytics plays a major role in the TVO framework. This is demonstrated in the outer ring of the diagram below – underscoring the importance of having the fundamentals of process and leader and organization improvement in place before the advanced technology can be layered on top of it.



Source: Maine Pointe



Digital transformation must be based on two things before technology is even sourced: Collaboration and integration throughout the entire end-to-end supply chain and measurement of results. An outstanding example is the Army Futures Command, established in 2018 with the mission of modernization and facilitating future readiness. Part of the Command acknowledges this need for collaboration with the institution of cross-functional teams designed to eliminate silos and promote joint collaboration on modernization efforts. A big part of the Command's success lies in the cultural shift it has created, not just within the Army but within the entire supply chain ecosystem, acknowledging that, especially with innovative startups eager to serve the defense market, communication with the Pentagon has seldom been easy. The program disrupted business as usual, and has enabled the Army to obtain more disruptive technology and out-of-the-box ideas to achieve its biggest modernization priorities.

Digital supply transformation in aerospace and defense is the tip of the spear in the modernization of acquisition and sustainment. Newer levels of collaboration, and viewing the supply chain as an entire ecosystem, will encourage greater stability, a greater data-driven supply chain environment that leads to improved decision-making and transform the very culture of the entire industry.



About the authors

David Grasso is Executive Vice President Aviation, Aerospace & Defense at Maine Pointe, a global supply chain and operations consultancy. With over 30 years of experience, David has worked along the entire value chain including engineering, manufacturing, supply chain and MRO in the US, Europe and Asia. He has a proven track record of successful business transformation, operational optimization and profitable growth, working collaboratively from C-suite to the factory floor.



Chris Brumitt is Vice President Aviation, Aerospace & Defense at Maine Pointe, which helps military and commercial clients break through silos to accelerate improvements in costs, quality, cash and throughout across the entire value chain. Chris has more than 30 years of experience and has a track record of helping senior executives realize the accelerated execution of significant strategic and operational goals.

About Maine Pointe

Maine Pointe, a member of the SGS Group, is a global supply chain and operations consulting firm trusted by many chief executives and private equity firms to drive compelling economic returns for their companies. We achieve this by delivering accelerated, sustainable improvements in EBITDA, cash and growth across their procurement, logistics, operations and data analytics. Our hands-on implementation experts work with executives and their teams to rapidly break through functional silos and transform the buy-make-move-fulfill digital supply chain to deliver the greatest value to customers and stakeholders at the lowest cost to business. We call this Total Value Optimization (TVO)TM.

Maine Pointe's engagements are results-driven and deliver between 4:1-8:1 ROI. We are so confident in our work and our processes that we provide a unique 100% guarantee of engagement fees based on annualized savings. www.mainepointe.com