



# DRIVE YOUR OWN DISRUPTION

IS YOUR AEROSPACE AND DEFENSE SUPPLY CHAIN IN SLEEP MODE?



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# IS YOUR SUPPLY CHAIN IN SLEEP MODE?

New IT, targeted effectively and strategically deployed, can turn the aerospace and defense supply chain into a powerhouse platform of top-line growth instead of a drag on production rate increases and increased MRO demand. But to turn it on, Chief Supply Chain Officers must step up to their strategic responsibilities.

In today's turbulent times, aerospace and defense companies are contending with myriad challenges. They include insurgent competitors to breakneck technological change and geopolitical instability. In the face of challenges like these, being relevant, and remaining so has never been more important. That's why many in the industry are working tirelessly to come up with new and innovative ways to serve the needs of their customers, ecosystem, and workforce, at high-value touchpoints.

New IT—big data analytics, artificial intelligence (AI) including machine or deep learning, blockchain, 3D printing, and robotics—can help companies manage supply chain complexity, accelerate responsiveness, and speed time to market for those "moments that matter."

An aerospace and defense supply chain reinvented with new targeted IT can become a next-generation supply chain: smart, connected, living and agile—the intelligent supply chain. It is grounded in co-innovation with operators and suppliers at the heart of everything it does. A supply chain like this is the foundation of an intelligent, Industry X.0 business, which embraces constant technological change—and profits from it.

A supply chain empowered by such new IT is the key to competitive advantage in the digital age. Blockchain is a great case of new IT technology that has the potential to transform the industry cost structure by reducing administration costs and providing multiple stakeholder visibility into the provenance and stock levels of items in the supply chain.

Accenture and Thales have demonstrated a new blockchain-based system that could help secure and streamline Thales' complex global supply chains.<sup>1</sup> Developed jointly by Accenture and Thales as part of Thales' firmwide digital innovation program, the solution provides a single, shared view of the supply chain—and an immutable audit trail—for partnering suppliers, manufacturers and operators. Based on Hyperledger Fabric, a Hyperledger project hosted by The Linux Foundation, the prototype combines blockchain, internet-of-things and other innovative technologies—including Thales's physically unclonable function (PUF) solution for silicon chips and Chronicled's tamper-proof cryptoseals—to track, trace and authenticate aircraft parts and materials.

# 86%

**of aerospace and defense companies expect to integrate blockchain technology into their corporate systems by 2021.<sup>2</sup>**

# THALES: USING BLOCKCHAIN FOR COMPETITIVE ADVANTAGE

**Blockchain has immense potential to impact the aerospace and defense value chain. Applications ranging from data sharing, spare-parts tracking, certification and smart contracts can all unlock exceptional improvements in operational efficiency.**

Moreover, companies in the aerospace and defense sector can leverage blockchain to also tackle the rapidly growing menace of counterfeit parts. Aerospace and defense manufacturer Thales understood this well. It realized early on, that building blockchain capabilities from the ground up may not be the most efficient way to tap this opportunity. As a result, it acquired digital security major Gemalto in 2017, to bolster its digital security capabilities. Gemalto would help Thales build secure and trustable blockchain solutions such as shared ledgers and smart contracts.<sup>3</sup>

But it didn't stop there. Next, Thales contracted Accenture to ascertain the true value potential for blockchain solutions. Accenture designed and tested a way to assign each component, with an IoT-enable CryptoSeal and FPGA fingerprinting technology. This allowed Thales to track materials in its supply chain accurately

with a unique identity, thus ensuring authenticity. Incorporating blockchain into the supply chain would allow for a more reliable marketplace, ensuring only genuine components from trusted suppliers are utilized. Thales found out that it could reduce operating costs anywhere between 10 to 15% by deploying such a solution.<sup>4</sup>

Thales recognized that successful deployment would not be possible unless its ecosystem was mature enough to adopt blockchain too. In 2018, it joined the Hyperledger open-source community to advance the applicability of blockchain for the sector. It also partnered with blockchain startup Chain to build software capabilities for its nShield hardware security module (HSM) used to securely store private keys—pieces of digital information that are used to sign blockchain transactions.<sup>5</sup>

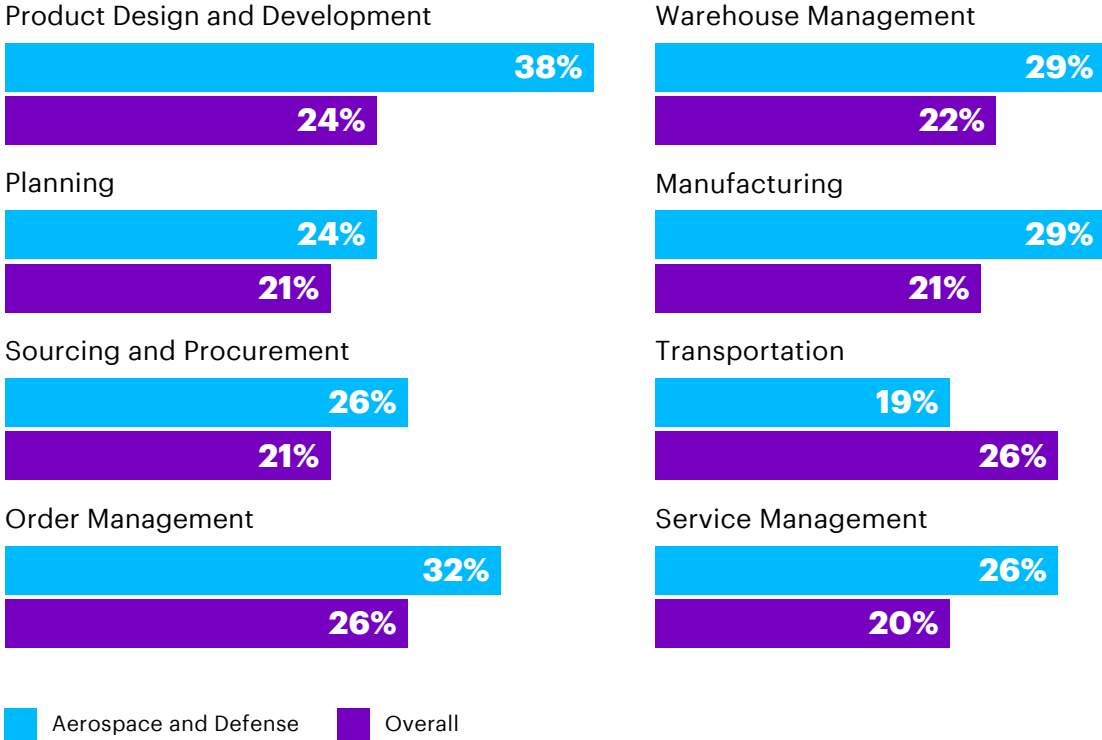
# A MISSED OPPORTUNITY

## Accenture explored how aerospace and defense Chief Supply Chain Officers are embracing new IT.

We found that despite widespread appreciation of new technologies' potential, many aerospace and defense companies are struggling with its adoption and face challenges to build the necessary digital workforce. As a result, they are still leaving significant value on the table.

Nevertheless, executives across industries are enthusiastically applying new IT tools, technologies and platforms along the supply chain as a whole (see Figure 1). And aerospace and defense companies seem to be adopting technologies at higher intensity than other industries.

**Figure 1 – Intensity of adoption of new IT technologies, tools and platforms across the supply chain**



The clear tendency to combine Industrial Internet of Things (IoT) technologies with other technologies indicates the strength of interest in turning the supply chain into a platform of networked value creation (see Figure 2).

Indeed, when it comes to their reasons for deploying new IT, the power of digital technologies is balanced between the ability to unlock trapped value (42%) and ease of deployment (36%).

**Figure 2 - Typical supply chain function deployed or deploying technologies, tools and platforms**

Planning	Sourcing and Procurement	Order Management	Warehouse Management	Manufacturing	Transportation	Service Management
Big Data Analytics	Blockchain	Blockchain	Autonomous Vehicles	Autonomous Vehicles	IoT/IIoT	3D Printing
Cloud	Cloud	Cloud	Cloud	Blockchain	Blockchain	Augmented Reality
Cybersecurity	Cognitive Computing	Cognitive Computing	IoT/IIoT	Custom Manufacturing	Cloud	Cybersecurity
Process Automation	Cybersecurity	Cybersecurity	Robotics	Social Media	Machine/Deep Learning	IoT/IIoT

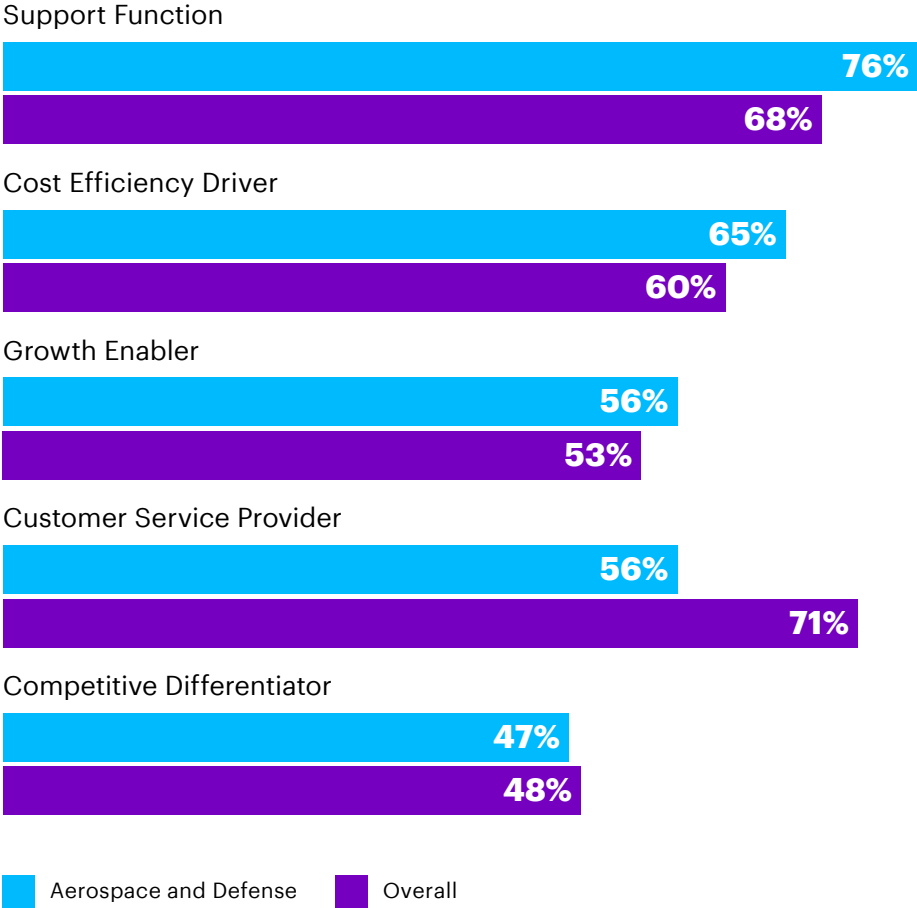
# A STRATEGIC DISCONNECT

In short, the full, value-driving potential of a digitally reinvented, next-generation supply chain still eludes many Chief Supply Chain Officers—not just for aerospace and defense.

In aerospace and defense and at many companies across the surveyed industries, the business as a whole does not see the supply chain as a driver of differentiation and aggressive growth.

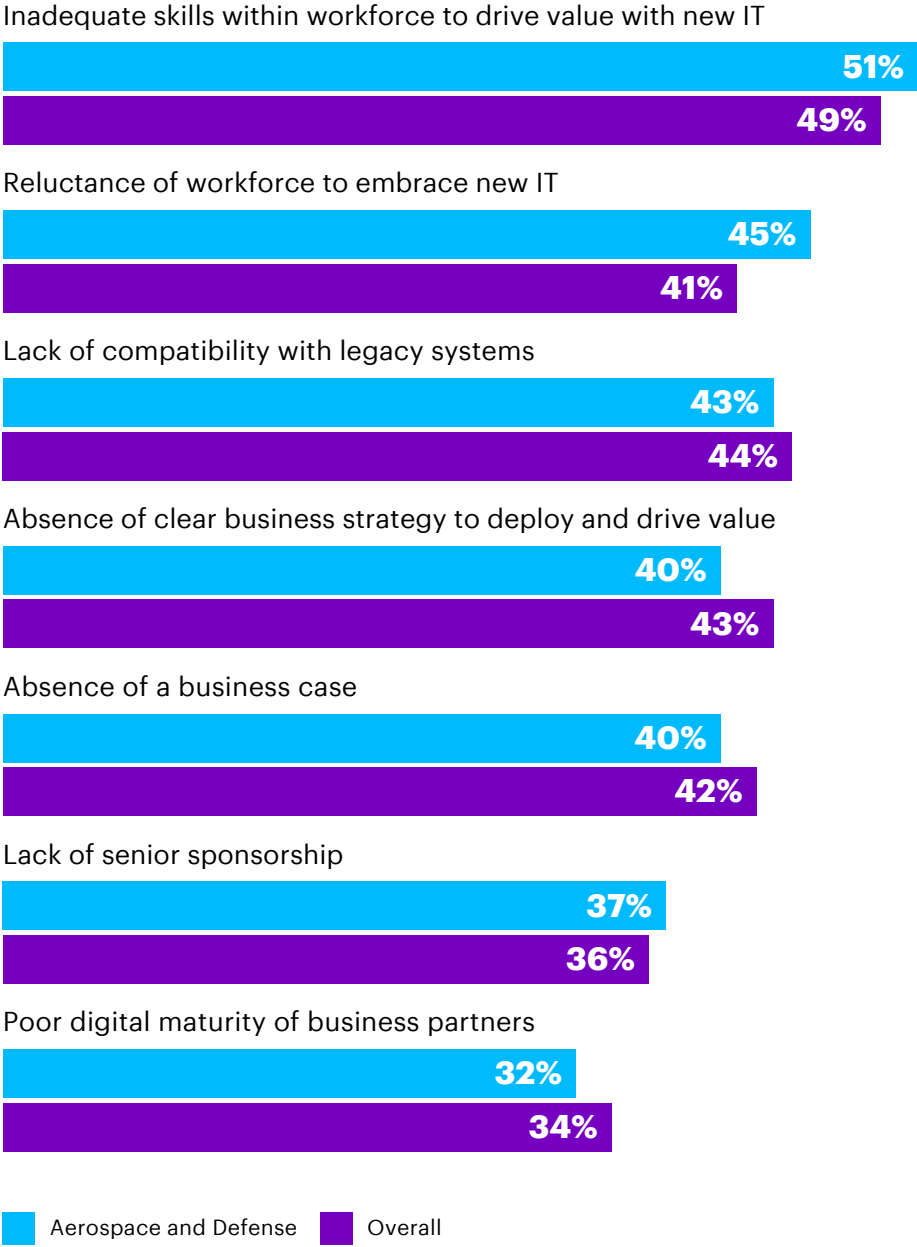
76% of aerospace and defense Chief Supply Chain Officers believe that by the end of 2020, the supply chain will continue to be a support function, with almost as many (65%) seeing that support function extended as a cost efficiency driver (see Figure 3).

**Figure 3 - By the end of 2020, what role will the supply chain function play in your organization?**



Chief Supply Chain Officers, meanwhile, blame three main challenges—an inadequately skilled workforce, reluctance to embrace new skills and incompatible legacy systems—for their function’s failure to drive value (see Figure 4).

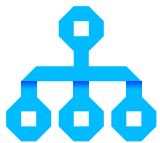
**Figure 4 – Please identify the top three challenges your company is facing while creating value with new IT technologies across the supply chain (% ranking within Top 3)**



# UNLOCK THE VALUE OF NEW IT

## LEADERSHIP, LABOR AND LEGACY SYSTEMS

If aerospace and defense Chief Supply Chain Officers were to work with the C-suite to resolve three core challenges, they could forge a new strategic partnership with unprecedented value-driving potential.



### LEADERSHIP

To build a new and productive working relationship with the business, aligned with business strategy, and to turn the supply chain into a competitive differentiator, Chief Supply Chain Officers need to inspire conviction in the C-suite, and particularly with those executives responsible for long-term digital investment: the CFO and the COO.

The relationship-building process starts by filling gaps in Chief Supply Chain Officers' own thinking. They need to reach out to teams across the business (and beyond) to discover how they are deploying new technologies to drive value, and then identifying the specific

supply chain areas where new IT could power both efficiencies and new growth.

Armed with concrete success stories, Chief Supply Chain Officers can build authentic and compelling value scenarios that will help the C-suite reach informed and meaningful technology investment decisions.

A **major aircraft manufacturer** is using IT to transform and make its supply chain processes intelligent, slashing the time it takes to forecast demand by 50% and decreasing parts ordering time from days to minutes.

# 40%

**of respondents lack a clear, value driven business strategy for IT**





Chief Supply Chain Officers need to build a workforce that embraces core and on-demand supply chain workers and AI/Robotics—all working together to drive productivity at speed. Supply chain executives can leverage their C-suite connections to secure support for a reskilling strategy founded on continuous learning.

By developing skills in design thinking and algorithm building, as well as the technical ability to use drones, robots and sensors, Chief Supply Chain Officers can also build self-reinforcing “learning loops”. And when in-house skills and assets are inadequate, Chief Supply Chain Officers contacts in the C-Suite can help them tap into the connectivity enabled by wider ecosystems.

**Lockheed Martin** recently pledged to invest over \$100M in employee training and educational opportunities over the next 5 years, in addition to the \$30M already deployed to support STEM scholarships to help drive the workforce of the future.<sup>7</sup>

Driving agility by digitally decoupling legacy systems is a lot less resource intensive and more impactful than spending on new, more compatible systems. Supply chain executives can start this process by decoupling data from their legacy IT systems, replicating it and moving it, in real time, to cloud-based data “lakes” that are accessible to customers. By decoupling applications from their legacy IT infrastructure, Chief Supply Chain Officers can then create the flexibility to scale new product and service offerings, new businesses and new markets, as well as accommodating diverse application workloads.

**Airbus** is extending its Skywise platform to suppliers and partners to provide a single source of truth for Airbus and its suppliers. With over 25 terabytes of data in play thus far, Airbus can collaborate with suppliers and make more informed decisions. To date, suppliers include commodities such as cabin, propulsion, aerostructures material and equipment/systems.<sup>8</sup>

**51%**

**of respondents suffer from an inadequately skilled supply chain workforce**

**43%**

**of respondents face a lack of compatibility with legacy systems**

# DRIVE YOUR OWN DISRUPTION

**A few leading Chief Supply Chain Officers are rapidly turning their organizations into Industry X.0 businesses. But too many of them still aren't approaching the challenge strategically. That needs to change—and fast.**

In a digital era, defined by customer relevance, how products and services are supplied to the end user is a key differentiator in ensuring sustained growth. Supply chain executives urgently need to seize the chance to work with the business, and pivot to next-generation supply chains powered by technologies that enable connectivity, integration and collaboration across a broad ecosystem.

By targeting their investments in these new technologies and working in close collaboration with C-suite leadership, especially the Chief Finance Officer and Chief Operating Office, supply chain executives can help shape the digitally reinvented enterprises of the future. The time to start driving the disruption of their own function is now.

# WHAT IS INDUSTRY X.0?

**Industry X.0 is the digital reinvention of industry. By incorporating the core operational efficiencies of its predecessor, Industry 4.0, and leveraging new IT to create new customer experiences, Industry X.0 businesses drive both top- and bottom-line growth.**

**An Industry X.0 business is:**



## **SMART**

Every product and each production process is self-monitoring, data-generating and aware of its ever-evolving business context.



## **LIVING**

There is an enterprise-wide cultural capability to act with speed, focus, and agility, to meet needs and seize opportunities.



## **CONNECTED**

Communications are end-to-end and multi-directional, while data-sharing among people, products, systems, assets and machines happens in real time.



## **LEARNING**

Adaptive interactions help create increasingly relevant and valuable user experiences continuously, over time.

## About the Research

Accenture polled 75 Chief Supply Chain Officers, Chief Operating Officers, Chief Procurement Officers and other supply chain leaders from the Aerospace and Defense industry in 5 countries. The survey was conducted during December 2017 and February 2018. All surveyed companies had annual revenues of at least US\$1 billion.

### Countries:

1. Canada
2. Switzerland
3. Germany
4. UK
5. Ireland

## Authors

### JOHN H. SCHMIDT

Aerospace and Defense Global Industry Lead

### MARC GELLE

Aerospace and Defense Europe Industry Lead

### JEFFREY WHELESS

Aerospace and Defense Global Research Lead

### RAGHAV NARSALAY

Managing Director at Accenture Research

Visit us at [www.accenture.com/aero](http://www.accenture.com/aero)

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**1** <https://newsroom.accenture.com/news/accenture-and-thales-demonstrate-how-blockchain-technology-can-secure-and-simplify-aerospace-and-defense-supply-chains.htm>

**2** <https://newsroom.accenture.com/news/vast-majority-of-aerospace-and-defense-companies-plan-to-integrate-blockchain-by-2021-accenture-report-finds.htm>

**3** <https://www.thalesgroup.com/en/worldwide/press-release/thales-and-gemalto-create-world-leader-digital-security>

**4** <https://newsroom.accenture.com/news/accenture-and-thales-demonstrate-how-blockchain-technology-can-secure-and-simplify-aerospace-and-defense-supply-chains.htm>

**5** <https://www.coindesk.com/chain-and-thales-interlock-for-blockchain-key-security-solution>

**6** <https://www.accenture.com/us-en/insight-industry-digital-reinvention>

**7** [https://www.postandcourier.com/business/boeing-commits-m-to-worker-training-programs-in-north-charleston/article\\_adf38640-8c49-11e8-a4a1-7fdaba2f5fc4.html](https://www.postandcourier.com/business/boeing-commits-m-to-worker-training-programs-in-north-charleston/article_adf38640-8c49-11e8-a4a1-7fdaba2f5fc4.html)

**8** <https://www.airbus.com/newsroom/press-releases/en/2018/07/airbus-extends-skywise-to-suppliers-.html>

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