Navigating the technological frontier in aerospace and defense

How AI, digital transformation, and cyber security
are converging to revolutionize the industry
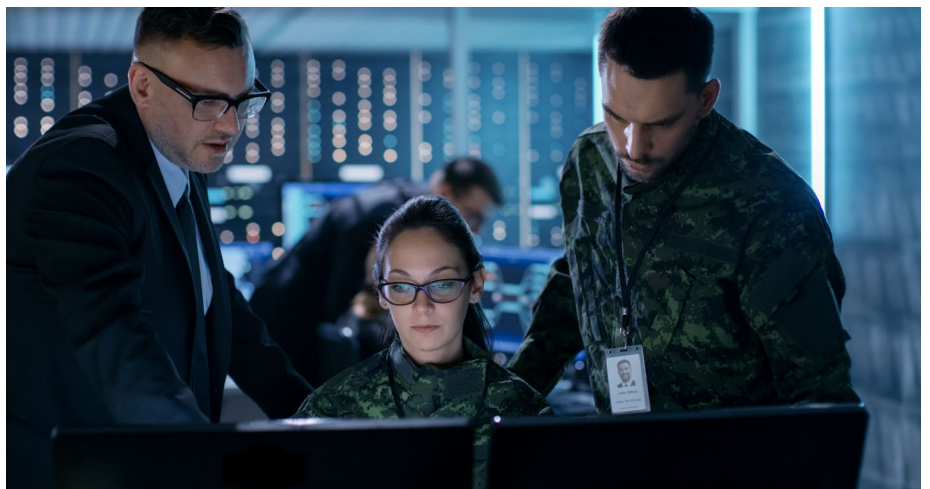
Industry backdrop

The aerospace and defense (A&D) industry is facing rapidly evolving technological landscapes and heightened global security demands. Artificial intelligence, digital transformation, and cybersecurity all present significant challenges to the A&D sector. Advanced information management solutions can provide actionable next steps.

Current landscape

Traditionally reliant on legacy systems, the A&D industry is now embracing cutting-edge technologies to enhance operational efficiency, improve decision-making, and maintain a competitive edge.

Key aspects of the current landscape include:

- **Increased digitization**
  A shift towards digital twins, model-based systems engineering (MBSE), and the Industrial Internet of Things (IIoT) is driving greater connectivity and data-driven insights.

- **Growing data volumes**
  The proliferation of sensors, drones, and satellites is generating massive amounts of data, requiring advanced analytics and management capabilities.

- **Evolving security threats**
  The rise of cyber warfare and the increasing complexity of defense systems necessitate robust cybersecurity measures.

- **Emphasis on sustainability**
  The aerospace industry is under increasing pressure to reduce its environmental impact, leading to the development of sustainable aviation fuels and electric propulsion systems.

- **Space sector growth**
  The expansion of commercial space operations, and the rising importance of satellite technology.

Despite the benefits of emerging technological advancements, the A&D industry faces significant challenges:

- **Data management complexity**
  Effectively managing and analyzing vast amounts of data is crucial for informed decision-making, but many organizations struggle with data silos and legacy systems.

- **Cybersecurity vulnerabilities**
  The interconnected nature of modern defense systems makes them vulnerable to cyberattacks, requiring advanced threat detection and prevention measures.

- **Supply chain disruptions**
  A&D companies spend tens of billions of dollars, engage thousands of factories, and employ hundreds of thousands of people in complex supply chains to build an aircraft or a defense system. Global supply chain disruptions can significantly impact production schedules and increase costs, highlighting the need for resilient and agile supply chain management.

- **Regulatory compliance**
  The A&D industry is subject to strict regulations, requiring robust compliance management systems.

- **Workforce challenges**
  The industry faces challenges related to finding and retaining skilled workers in specialized technological fields.

Proposed technologies and services

To address these challenges, the A&D industry can leverage a range of advanced technologies and services:

Artificial intelligence (AI) and machine learning (ML)
AI and ML can be used for predictive maintenance, autonomous systems, and enhanced situational awareness.

Cloud computing
Cloud-based solutions can provide scalable, secure data storage and processing capabilities.

Cybersecurity solutions
Advanced cybersecurity measures, such as threat intelligence and intrusion detection, are essential for protecting sensitive data and systems.

Digital twin technology
Creating virtual replicas of physical assets allows predictive maintenance and systems simulation.

Advanced data analytics
Tools that allow parsing large data sets can be used for predictive analysis and better decision making.

OpenText solutions

OpenText offers a comprehensive suite of solutions that can help A&D organizations navigate these technological challenges:

1. Information management and automated workflows

58 percent of business leaders say they've lost out on business opportunities because they lack timely access to data.[1] OpenText™ solutions can help A&D organizations manage and analyze vast amounts of data to drive better decision-making and improved operational efficiency.

Give employees timely, secure access to relevant information within workflows to aid decision making. Help prevent missed deadlines or delays in processing while freeing staff from repetitive tasks.

2. Cybersecurity

OpenText cybersecurity solutions improve A&D companies' defenses with capabilities such as:

- Threat detection and response
- Application security
- Identity and access management
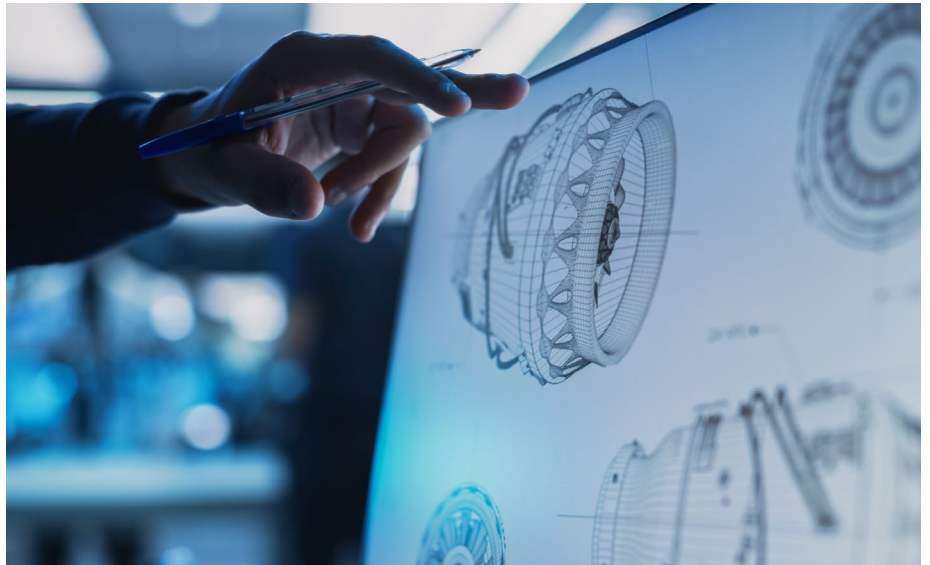- Data protection and privacy

1   IDG Communications, *Digital Friction Holds Back Today's Businesses,* 2024

Complementary security capabilities provide 360-degree visibility across endpoints and network traffic to identify, triage, and investigate anomalous and malicious behavior. OpenText also offers cloud-based global signal analytics technology that discovers malicious traffic, defines digital genealogies, and defends against future attacks.

3. Supply chain management

OpenText's supply chain management solutions can help organizations improve supply chain visibility and resilience. During the manufacturing process OpenText adds information to product data to create a manufacturing BOM, operating procedures, technical training, and supply chain logistics.

This comprehensive manufacturing BOM contains relevant supply chain information and serves as a single source of truth, including an audit trail of decisions. Exchanges with strategic vendors, such as equipment manufacturers and field service providers, become frictionless. End-to-end visibility helps prevent production downtime.

4. Content management platforms

OpenText provides platforms that securely store and manage the sensitive documents necessary for compliance and security. Establish a single source of truth, save time, build efficiencies, lower risk, and enable better decision making for more satisfied customers and employees.

The platform includes built-in compliance with 5015.02 and DTM 22-001 to be a turnkey records management system suitable for the DoD. Through "zero click compliance," records are made automatically compliant with government recordkeeping requirements without asking the user to do anything.

5. AI and analytics

OpenText provides tools that can be used to leverage AI and analytics for business intelligence. The OpenText unified analytics platform is based on a massively scalable architecture that spans the broadest set of analytical functions, including time series sensor data, pattern matching, geospatial, and machine learning. A&D companies can easily apply these powerful functions to the largest and most demanding analytical workloads to predict and act on equipment operations.

6. Observability

OpenText provides a holistic view of system behavior, enabling a deeper understanding of intricate interdependencies. This is exceptionally important within the A&D field, where systems are becoming ever more complex and data rich. Robust observability allows collecting data from all aspects of a system to quickly see and respond to anomalies.

Why OpenText

A&D companies across the world are in a race to redefine their operations, improving their supply chains and streamlining manufacturing. That race is as much about information management as it is about production itself.

OpenText is the world's leader in information management, offering the most complete and integrated platform. We serve thousands of aerospace and defense companies across the world in their journey to organize, integrate, protect, and automate data as it flows through business processes inside and outside the organization. No information management platform is more secure or scalable to manage high volumes of information at various stages of the lifecycle—from ingest, to operations, to archive.

Effective information management is the foundation of actionable artificial intelligence. OpenText solutions provide a comprehensive information management platform by managing, integrating, and automating information flows across the value chain. They reduce the cost of quality, accelerating supply chain digitization by leveraging a pre-connected network of more than one million companies and managing software development and delivery.

A special partnership with SAP

One of the most common enterprise systems utilized by aerospace and defense companies is SAP. OpenText and SAP have 11,000 joint customers using 13 solution extensions developed by OpenText. Our company has won the SAP Pinnacle award 18 years in a row as a top-tier technology partner. We have seven million SAP® cloud customers, 2,000 SAP RISE subscriptions, and 300 customers using OpenText extensions into SAP SuccessFactors®.

The OpenText archiving platform stores 1.2 petabytes of compressed content from SAP customers, with 140 terabytes in monthly transfer volume. Hundreds of OpenText staff are dedicated to SAP in some way.

OpenText and SAP product engineering teams are working together on an exciting new solution that should interest the A&D community: Procurement for Public Sector. This end-to-end streamlined solution includes Ariba® Sourcing and Procurement with OpenText™ Content Management. This modern SAP Fiori®-based procurement solution for the public sector is the successor to SAP SRM PPS which runs out of maintenance in 2027.

Proposed next steps

Together, let's outline a vision and identify opportunities to quickly improve your operational excellence key performance indicators. Below are some suggested next steps to ensure your operational excellence journey is in lock step with your information management journey.

- **Introductory meeting**
  Bring together your OpenText Senior Account Representative and your company's Account Business Unit President, COO, CTO, or decision maker on operational excellence investments.

- **Joint roadmap exchange**
  Hold a day-long information exchange with operations and critical supporting lines of business, such as engineering, supply chain, and IT leaders (Directors and above). OpenText will gather insight about your operational excellence initiatives, current approaches, and obstacles, and then provide an overview of information management technologies and best practices that support them.

- **Business value consulting workshop**
  Engage the OpenText Business Value Consulting Team with project teams and supporting lines of businesses to assess current state and quantify the business impact of potential OpenText solutions.

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