2021 Industry Trends + 2022 Outlook

Aerospace & Defense | High Tech | Automotive & Logistics

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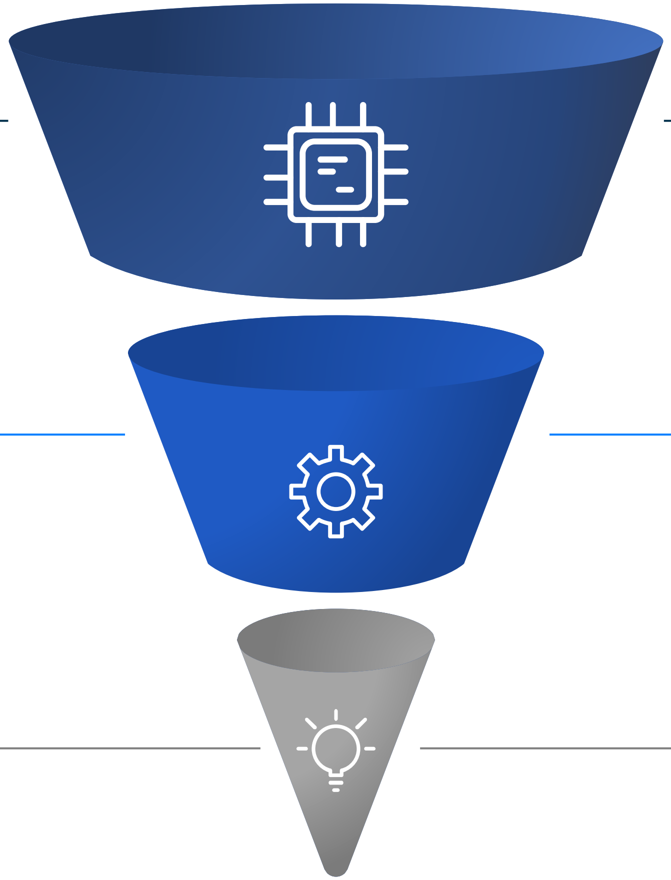
Executive Summary | Aerospace & Defense, High Tech, Automotive & Logistics

M&A to Drive Growth
Innovation, technology transformation, and geopolitical and regulatory shifts will likely drive a robust deal environment.

Innovation and Digitization
The focus will be on regulations, infrastructure, and propulsion technologies.



ML & AI Dominance
With siloed data and aggressive ML dominance, the industry is expected to produce cross-functional products across different verticals.

Digital Twins
With Covid, companies are moving toward digital twins, which enable real-time virtual representations of physical objects, processes, and even operations.

Supply Chain Disruption to Continue
With the ongoing microchip shortages, raw material sourcing and connecting the right demand will be an added challenge; and this is expected to continue in the upcoming months.

Move Toward Electrification
There are many new developments in the electrification space, with EVTOL, UAV, and space technologies, and also in the area of cutting carbon emissions, with the launch of electric vehicles. Infrastructure is still the biggest challenge that both the aerospace and automotive industries are facing.

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Aerospace & Defense

Aerospace & Defense | Key Trends

Acquisition and Contracts - AI battlefield, unmanned defense systems, hypersonic tech

Trends show the government directly engaging with medium-scale suppliers, bypassing Tier 1 suppliers.

The FAA’s new drone policies in December 2020 lead to developments in drone inspection, tracking, and energy efficiency technologies.

Rise in nuclear-based design and exploration, with more contracts and acquisitions.

Defense antennas are seeing deployment, with a polarized antenna array by TiaLinx and Thales’ fully digital radar with active antenna.

Electric aviation is accelerating its development in propulsion technologies using hydrogen fuel

Space station technologies that were launched included features such as radiation protection, pressurized module launch, and urban air mobility infrastructure.

Space-based simulator platforms and transport technologies are the key focus.

Novel EVTOL designs were launched like high-speed VTOL, tilt wing design, and hydrogen testing on military trucks

To democratize access to space mobility technology, the Hardware-as-a-Service model was launched.

Developments in space-based technologies include Earth observation, plasma thrusters, and quantum-based antennas.

Significant developments in SAR technologies include the world's first wide area imaging for persistent monitoring and the longest solar tracker.

$61 billion worth of deals through August 31, 2021

Mergers & Acquisitions

January
Partnership - Commercial space activities

April
General Atomics, Blue Origin, and Lockheed Martin partner for nuclear space propulsion

July
L3Harris Technologies' military training business

July
Partnership - Air taxi pilot training program

September
Partnership - Pilot safety and fuel cell technologies

November
Acquisition - Advanced space electronics supplier

Contracts

January
Prime contractor designation on **$3.3 billion** for global support strategy

January
$1.28 billion Undefinitized contract action (UCA) to support operations

January
S4.9 billion for missile warning satellites

March
$2 Billion Ceiling air force base modernization contract

March
$12.6 billion DIA SITE III IT support contract

April
$2.2 billion for naval nuclear reactor components and fuel

Innovation to drive 2022

Increased visibility through digitalization

Companies are expected to embrace the digital and smart factory trend.

New space technologies

In 2022, developments in three key areas—the launch industry, satellite trends, and new technology—could drive growth in space-based services.

Recovery in air travel

Businesses will leverage digital technologies to offer proactive and predictive maintenance capabilities as well as utilize them in creating new revenue models.

AAM firms to start adopting new innovative business models

The focus will be on regulations, infrastructure, and propulsion technologies.

M&A to drive growth

Innovation, technology transformation, and geopolitical and regulatory shifts will likely drive a robust deal environment.

Advanced military capabilities

With the US military gradually shifting its focus away from the Middle East to emerging threats in the Far East, defense companies should emphasize building improved capabilities in fighter aircraft, space resilience, shipbuilding, and cybersecurity to drive growth.

*Source: Deloitte

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High Tech

High Tech - Key Trends

Cross-functional mergers and partnerships are starting to rise for better utilization and development of technologies.

Companies like Google and Intel shed their part of AI and in-house development business.

Firms such as IBM and ATOS are shifting gears toward cybersecurity and cloud development through mergers and acquisitions.

Supercomputer announcements regarding major developments from HPE, Intel, and Google have surfaced in the past few weeks.

Healthcare technology is being adopted in different practices, with novel entrants to the space.

Supply chain traceability is among the most sought-after solutions by OEMs to reduce the bullwhip effect and increase optimization..

Warehouse-related AI is being implemented with new SaaS offerings and increased robotic integration.

There's a special focus on monitoring systems and diagnostic technologies backed by artificial intelligence and machine learning.

Cybersecurity becoming a key focus area especially in the defense and medical industries

Semiconductor product development in NLP and quantum computing are on the rise.

Increased cross collaboration between Artificial Intelligence and Robotics, with a focus on the food processing industry.

Increased Mergers and Acquisitions to develop niche capabilities

Partnerships | Contracts

Mergers & Acquisitions

Qualcomm → NUVIA	**January**	$1.4 billion acquisition deal with chip startup NUVIA
Cisco → imimobile	**February**	$730 million cloud communications software and services deal
okta → auth0	**May**	$6.5 billion in identity authentication software
Microsoft → Darktrace	**May**	Partnership - autonomous cyber defense across the cloud
IBM → /b	**July**	Data and hybrid cloud consulting services
twilio → Z	**July**	Acquisition - $850 million business texting startup

Contracts

Department of State → sparkcognition	**April**	Small Business Innovation Research (SBIR) program
NASA → MemComputing Inc.	**July**	SBIR contract for supercomputing
Canada → ZIGHRA	**October**	Continuous authentication for remote access
Department of State → HALVIK	**November**	Support for the JAIC in its mission to transform the DoD
Department of State → intel	**March**	Advanced chips

Innovation to drive 2022

Integration of siloed data

Businesses will look for modern platforms and approaches, such as data fabrics, that bring composable stack and distributed data together.

Blockchain technology

Smart contracts that allow for supply chains to be optimized and the ability to eliminate ad fraud.

Digital twin technology

With Covid, companies are moving toward digital twins, which enable real-time virtual representations of physical objects, processes, and even operations.

Cloud-based automation

Cloud vendors are automating and abstracting ever-higher-order business processes to create industry optimized platforms.

Health tech focused on human connection

Virtual health sessions will bring providers closer to their patients in a more intimate setting for care delivery.

Hyperautomation & decisive intelligence

In the next two years, a third of large organizations will be using decision intelligence for structured decision-making.

*Source: Deloitte

Automotive & Logistics

Automotive & Logistics - Key Trends

European Green Deal 2021

Combining internal combustion engine and electrification capabilities.

Tesla's Gigafactory establishment in Berlin is expected to produce 500,000 vehicles per year during the first phase.

Reducing vehicle weight with composites.

Google is the prime infotainment provider in the contemporary automobile market, replacing QNX.

Micromobility is great option during the pandemic.

Electric vehicle sales will boom. China will be the major electric car growth market, recording 77% year-on-year growth in 2021.

RFID in logistics has potential, particularly in route optimization and the real-time tracking of goods.

Omni-channel fulfillment is an increasing reality in the logistics industry.

Big-data-driven predictive modeling is the basis for massive gains in route optimization.

Challenges include globalization and compliance to meet KPI requirements while keeping costs at a minimal level.

Companies can use modern integration technology and re-optimized routing by utilizing API integrations.

Supply Chain and Technology to drive 2022

EVs will be the future of mobility	M&As will continue to be a crucial strategy	Focus on connectivity & machine learning	Car-as-a-Service models to progressively merge	Automakers to re-imagine sourcing	Supply chain disruption to continue

*Source: Gartner

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PreScouter helps clients gain competitive advantage by providing customized global research. We act as an extension to your in-house research and business data teams in order to provide you with a holistic view of trends, technologies, and markets.

Our model leverages a network of 4,000+ advanced degree researchers, industrial experts, engineers and analysts across the globe to tap into information from small businesses, national labs, markets, universities, patents, startups, and entrepreneurs.

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- **Customized Insights:** PreScouter finds and makes sense of technology and market information in order to help you make informed decisions.

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150,000+ HOURS OF RESEARCH COMPLETED FOR CLIENTS

Potential Next Steps

- ✓ PreScouter can conduct anonymous interviews with companies profiled to help you learn more about their technologies, processes, and partnership potential.
- ✓ PreScouter can identify the intellectual property position of these players and understand patent trend evolution.
- ✓ PreScouter can identify additional suppliers located in specific regions to source products and other services.

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