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Destination Digital

How digital transformation
can build resilience and unleash
growth in aerospace and defense

Executive summary

The Aerospace and Defense industry is being hit by disruption on multiple fronts, All of these disruptive forces point to a singular conclusion: the need for digital transformation

Aerospace and defense companies are going through disruptive changes and are faced with overwhelming, competing challenges as they continue to navigate the impacts of the COVID-19 pandemic. As a direct impact, the commercial segment is witnessing a shift from supply led to demand driven manufacturing and supply chain. However, rising regional tension across the globe coupled with defense platform replacement in the United States and Europe will continue to drive demand in the Defense industry.

Reduced aircraft demand, coupled with the trend to move from product to innovative service-based business models powered by data, will also reshape the industry. The competition for talent continues to intensify, with the industry finding it tough to compete for the best STEM (Science, Technology, Engineering, and Mathematics) talent. Health and safety will remain a concern.

All these disruptive forces point to a singular conclusion: the need for digital transformation. Aerospace and defense executives acknowledge this and anticipate more than a two-fold increase in the sale of new digital services over the next five years.¹

Aerospace and defense companies that have embraced digital transformation are already pulling ahead, creating sustained businesses and new business models that are moving them decisively from today's core operations to new approaches that drive growth. Others need to increase their velocity to reach their own digital destination.

Aerospace and defense companies that want to accelerate their own digital transformations need to transform around three fundamental dimensions:

1. Digitize across the value chain

2. Collaborate to innovate

3. Embrace new business models

Companies that successfully embrace digital at the core of their businesses are likely to see the rewards. Leaders today achieve up to four times improvement on their digital investments than other industry players (figure 1).²



Major disruption

The Aerospace and Defense industry is entering an era of disruption caused by external events, powerful market forces, and disruptive technologies that will redefine its boundaries – and companies will need to adapt if they want to be ready for the future.

Supply chain volatility

The global Aerospace and Defense industry is facing increased volatility in demand because of COVID-19 and Boeing 737 grounding impacts. As airlines reduced their flying capacity, halted fleet expansion plans, and reduced aftermarket services to save on cost, OEMs are shifting from supply led to demand-driven manufacturing and supply chain.

Commercial aerospace companies are poised to face significant revenue decline for 2020, with global OEM's Boeing and Airbus having already announced losses of \$641M and \$522M in Q12020 respectively and production cuts ranging from 30% to 50%.³ The current inconsistency in demand and slower production rate will cause big challenges for OEMs and Tier1 suppliers in rebalancing production lines as demand changes.

Global uncertainty

Regional tensions across the globe, along with defense platform replacement in the United States and Europe, are expected to drive defense expenditure around the world, with global defense spending estimated to increase at a CAGR of 2.1%, over the next five years.⁴ Manufacturers of military equipment are rushing to seize opportunities presented by growing defense budgets.

Workforce transformation

The COVID-19 outbreak has led to an emergence of workforce health and safety as a core priority for C-suite leaders. Aerospace and defense companies have rapidly scaled the use of a myriad of cloud based remote-collaboration technologies to maintain production, while safely and efficiently displacing large numbers of workers in a remote-only working environment. There is also an increased focus on leveraging digital technologies and

capabilities to prepare for the future workforce, thereby reducing billable work hours for aerospace and defense companies. The challenges around lack of STEM and digital talent resources will continue to exist as aerospace and defense companies compete for the best talent with major technology companies such as Google and Amazon.

New business models

To cater to reduced aircraft demand and the need for alternate revenue streams, OEMs are entering new businesses, doubling down in aftermarket services and vertically integrating to harness new services. For example, to expand service portfolio, Boeing has teamed up with Safran to design and build advanced APUs that will create more lifecycle value for customers.⁵

Traditional aerospace and defense companies are re-thinking their business models such as product to service transformation and shared ownership models. For example, GE Aviation's TrueChoice⁶ product suite and Rolls Royce's Totalcare⁷ program.

Aerospace and defense companies are partnering across geographies to collaborate and reinvent product and services. For example, European manufacturers are teaming with North American contractors such as Saab-Boeing T-X⁸, Leonardo-Boeing MH139⁹, Safran-GE LEAP¹⁰

Technology disruption

Aerospace and defense companies are witnessing a rise in the adoption of digital technologies. For example, cloud is being leveraged to make business operations resilient and responsive. Artificial Intelligence is transforming human-machine experience. Digital twins are transforming the way companies manage product lifecycles.

Digital is no longer an aspiration, it's an expectation. And those expectations are changing, as people become accustomed to digital technology as an intertwined element of their everyday lives. That's a perception that is strongly supported by aerospace and defense executives surveyed for Accenture's Technology Vision 2020, 84% of whom agree that technology has become an inextricable part of the human experience.¹¹

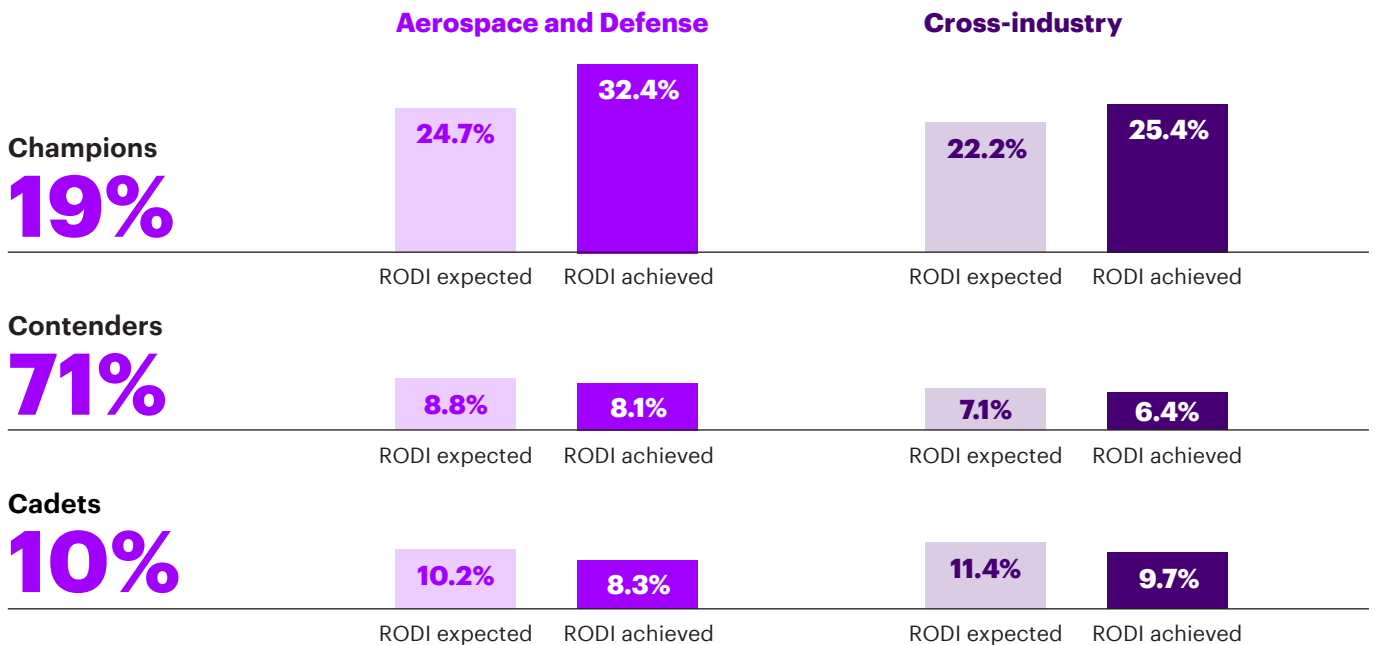
Major rewards

For all aerospace and defense companies, a comprehensive digital transformation strategy is essential to meet the challenges they face.

A growing number of aerospace and defense companies are embracing a range of digital technologies, from Artificial Intelligence to robotics, across key business functions, and seeing the rewards on the bottom line.

Our research shows that the top 19% of aerospace and defense companies, whom we call champions, achieve significantly higher than average returns on their digital investments, compared with their industry peers (figure 1). Their digital returns even beat the industry average for returns on overall invested capital (ROIC). What's more, champions are successfully scaling more than 50% of their digital proofs-of-concept.¹²

Figure 1: RODI for aerospace and defense champions (RODI is calculated as Return on Investments (Net Gain/Total Investments) from scaled digital POCs across all the key business function)



A three-point plan for the digital future

For the champions achieving significantly higher returns on their digital investments, it's clear that digital transformation offers both big rewards and a strategy to manage disruption.

The 71% of aerospace and defense companies lagging behind the champions need to accelerate velocity to their own digital transformation by embracing digital at the core of their business.¹³

So, how can aerospace and defense companies realize the full potential they clearly identify? We have a three-point approach to help companies adapt to these disruptions, successfully embrace a digitally driven future and reap the rewards of doing so.

1. Digitize across the value chain

To increase efficiency and address new portfolio imperatives, aerospace and defense companies need to embrace a Be Digital and Go Digital approach which leverages digital technologies. By adopting a stream of digital technologies to automate across the value chain, aerospace and defense companies can build a responsive and resilient enterprise and be future-ready for black swan events.¹⁴

2. Collaborate to innovate

Aerospace and defense companies operate in a complex ecosystem. To drive innovation and boost future-readiness, they need to collaborate across the industry and technology ecosystem, working together with a wide range of different partners, suppliers and vendors to sustain and grow overall business value.

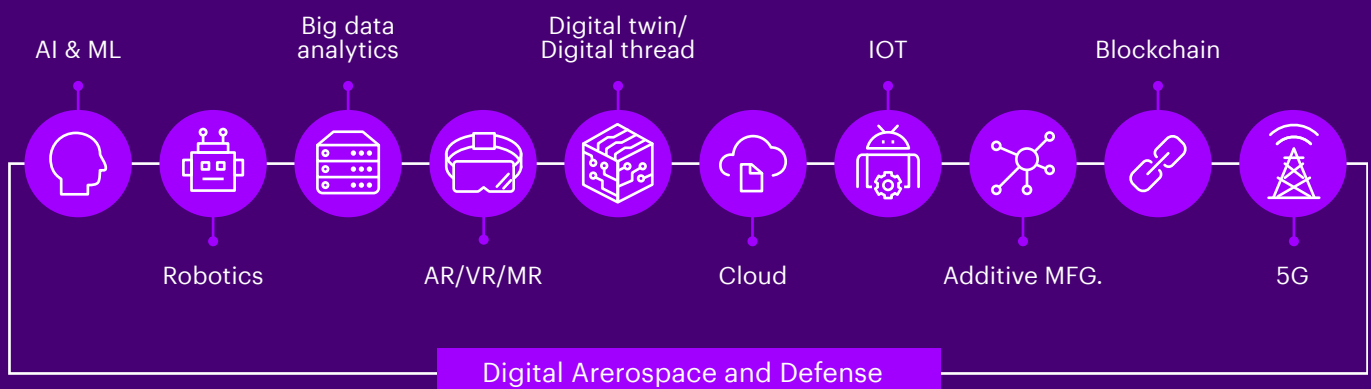
3. Embrace new business models

Aerospace and defense companies need to address changing demands such as the shifting towards narrow-body and electric aircraft and the drop in overall travel. They need to reinvent their business models while managing the Wise Pivot. This means balancing today's essential ongoing business with new business models for the future, and also current needs with the requirement to move decisively to the New.¹⁵

We believe that companies that successfully adapt to the changing landscape and embrace digital will reap huge rewards, such as increased revenue, higher return on investment, greater shareholder returns and higher future value. Failing to act could have harmful repercussions. Over 80% of aerospace and defense executives fear substantial cost escalations alongside losing significant market share if they fail to overcome organizational challenges for digital reinvention.¹⁶

To leverage power of digital and achieve scalable outcomes with agility, aerospace and defense companies will need to gain competence with digital technologies (figure 2).

Figure 2: Digital technologies



Mapping the route to a digital future

To harness the three-point approach and accelerate purposefully towards digital transformation, companies need to establish a cloud-enabled, Artificial Intelligence-powered, digital-first mindset, across all aspects of their business.

That means putting digital at the heart of operations and building digital capabilities across the value chain. In addition, companies must pay careful attention to transformation management to establish a working culture in which digital initiatives can thrive.

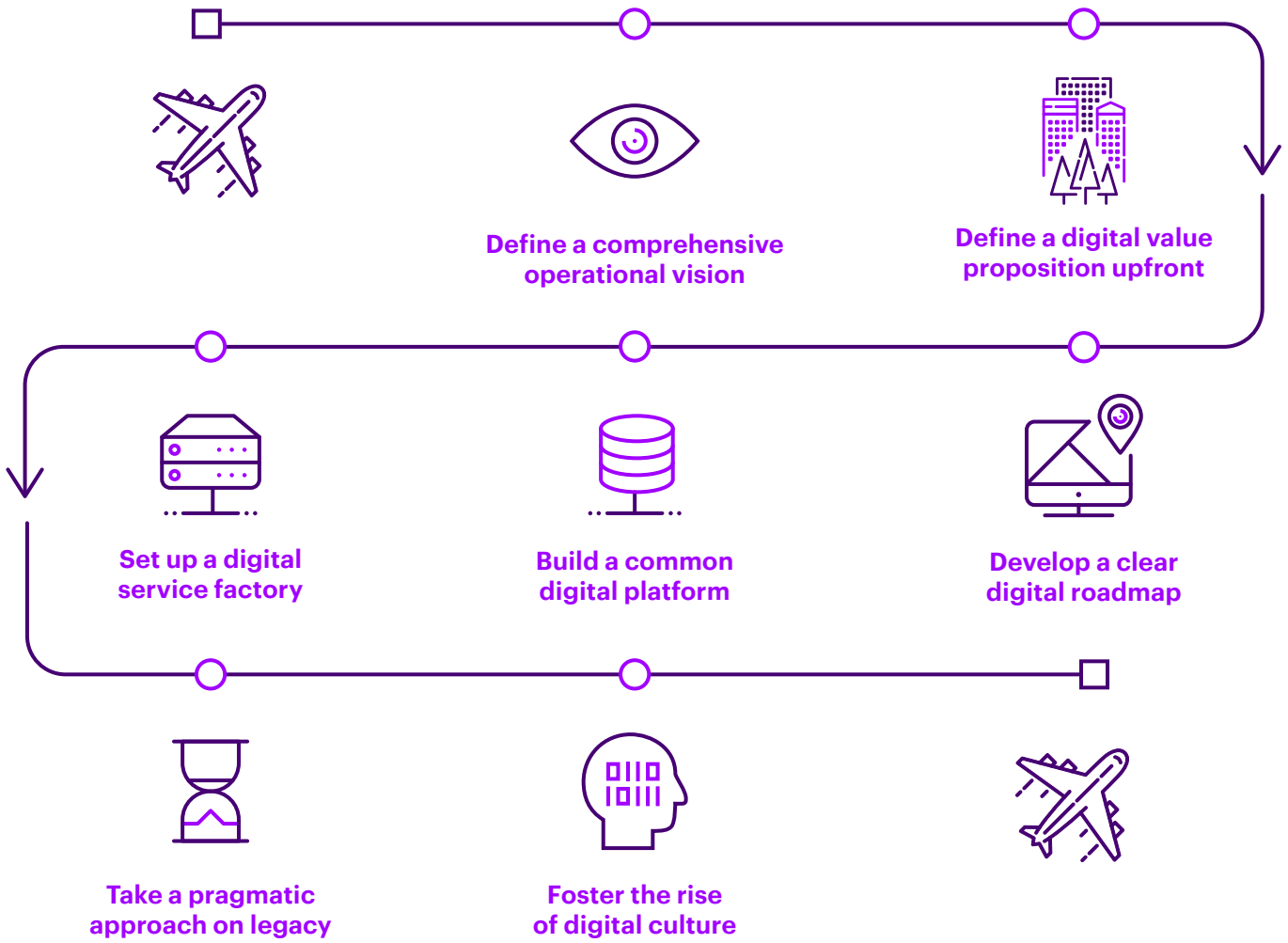
A successful digital transformation will rest on defining clear objectives at the outset – companies must set a destination with a comprehensive digital vision. This needs to be broad enough to encompass their own organization and the wider ecosystem, as well as articulate what the vision means for all their stakeholders. The digital value proposition must also be defined upfront, with a clear idea of the performance drivers and strategic objectives that will inspire innovation and create value. With that vision set, companies must develop a digital roadmap, with clearly defined milestones.

To support their journey to digital transformation (figure 3), companies must build digital platforms to break down silos, maximize data and solution synergies, and reduce the cost of digitization by avoiding the need to ‘reinvent the wheel’ for each digital program. Deploying digital twins and digital threads can ensure smooth product lifecycle management across different functions and organizations.

At the same time, it’s important to take a pragmatic approach to legacy technologies, with a multispeed IT approach that builds digital capabilities progressively. It’s also important to foster a digital culture to embed and sustain new ways of working across the organization.



Figure 3: Digital transformation journey



Destination digital: fly high and beyond

To overcome uncertainties and emerge stronger, aerospace and defense companies should focus on three areas:

1. Make a strong pivot towards digital transformation and leverage smart technologies
2. Adopt intelligent solutions powered by Artificial Intelligence to address challenges
3. Enable cloud infrastructure and talent to help bring strategies together quickly

The time to transform is now!

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