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INNOVATING FOR RESILIENCE

Navigating a 'post-digital' world

TECHNOLOGY VISION 2020
AEROSPACE AND DEFENSE

#TechVision2020

COVID-19 poses an unprecedented challenge to the Aerospace and Defense industry, but different segments will experience the crisis in different ways. Digital remains a powerful driver of change, with the potential to impact across every aspect of the industry value chain. To navigate both present and future challenges, aerospace and defense companies need to double down on their digital transformation.

From the very earliest days of manned flight, aerospace and defense companies have, almost by definition, solved large, audacious challenges. And in recent times few have been larger or more complex than the COVID-19 pandemic.

Of course, as they seek to rebalance their operating models and achieve resilience in the post COVID-19 world, the different segments of the Aerospace and Defense industry will each face specific contexts. Defense and space would appear to offer a relative safe haven in terms of demand, as governments step up to offer more favorable terms and budgets remain committed. In contrast, commercial aerospace has been hit by airlines cutting capacity almost overnight (between 40% and 100%) and asking for deferrals, model switches on orders and cancellations. The aftermarket is also facing reduced revenue as airlines defer overhauls to conserve cash.¹

But the backdrop of change impacting the industry before the pandemic – largely driven by digital technologies in the business and in the products and services – has not and will not recede. Digital transformation will continue exerting a powerful influence. Whether it's about being more data-driven, deploying more automation and AI, using the cloud extensively or having a more collaborative culture and the digital tools to support it – every organization now recognizes the power of digital to achieve resilience in readiness for a volatile world. Digital is no longer an aspiration, it's an expectation. And what's more, 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 this year's Accenture Technology Vision, 84% of whom agree that technology has become an inextricable part of the human experience.²

Technology has the potential to transform every aspect of the aerospace and defense value chain. From customer experience, to engineering and manufacturing and from the extended enterprise to operations and aftermarket, digital technologies can fundamentally change the art of the possible and the way that all parties in the chain interact and collaborate. Senior aerospace and defense executives agree. Nine out of ten say that their organizations need to elevate their relationships with customers as partners. To that end, for example, 85% of executives have piloted or deployed voice of the customer analytics programs to drive product decisions.³

Executives are also anticipating significant increase in the sale of new digital services, predicting these to rise over two-fold in the next five years.⁴ 81% say that their connected products and services will have more, and more frequent, updates.⁵ Aerospace and defense executives expect to harness new technology to deliver these services. 71% say that robotics will enable the next generation of services and 77% are already piloting or deploying AI in their operations.⁶

Navigating a 'post-digital' world

Five technology trends reshaping the future

While the industry is demonstrably embracing digital, there's still plenty of progress yet to be made. The themes of the Accenture Technology Vision 2020 for the Aerospace and Defense industry highlight some of the key influences and trends that aerospace and defense businesses will need to navigate as they accelerate their journeys into the new digital world.

1 The I in experience

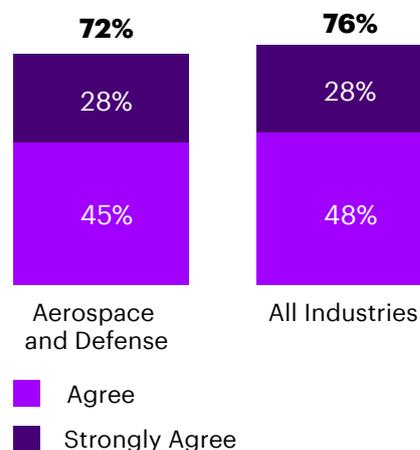
Rather than operating in isolation, leading businesses work with their customers to create digital experiences.

Customers have not rejected customization - far from it. But they are more wary of how companies deliver it. Two-thirds (66%) of those surveyed, report that they are just as concerned about the commercial use of their personal data and online identity for personalization purposes as they are about security threats and hackers. In response, customers want a larger say in how their data is used and greater input into the experience they get.

Leading aerospace and defense companies are providing immersive and co-created experiences to improve aircraft design and maximize the enjoyment and comfort of the flight experience. The next generation, technology-driven experiences will place people at the center of the aircraft design process, prioritizing comfort, hygiene, safety and the passenger experience.

72% of aerospace and defense executives agree that organizations need to dramatically reengineer the experiences that bring technology and people together in a more human-centric way,⁷ slightly lower than the proportion across all industries (figure 1).

Figure 1: The I in experience, survey results: organizations need to dramatically reengineer experiences that bring people and technology together



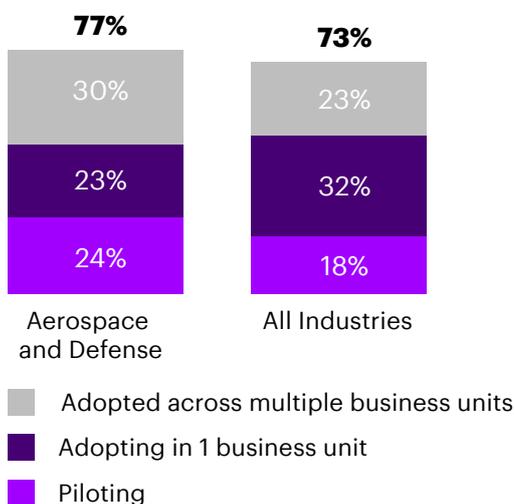
2 AI and ME

The full potential of AI has moved beyond being merely automating simple task to a powerful collaboration tool used between human employees and machines.

Maximizing the impact and value of AI in aerospace and defense means understanding how human-AI collaboration can improve outcomes. But unlocking this potential requires more than building or buying a tool. It means reengineering and reimagining the enterprise and the workflows AI systems are designed to support such as efficient supply chain management, designing a better aircraft or even managing specialized talent.

It is an area of strong focus for the Aerospace and Defense industry, with 30% of executives reporting that AI has been adopted across multiple business units, compared with 23% for all industries.⁸ Overall 77% report that AI has been piloted or adopted in their business, compared with 73% across all industries (figure 2).⁹

Figure 2: AI and ME, survey results, proportion piloting or adopting AI



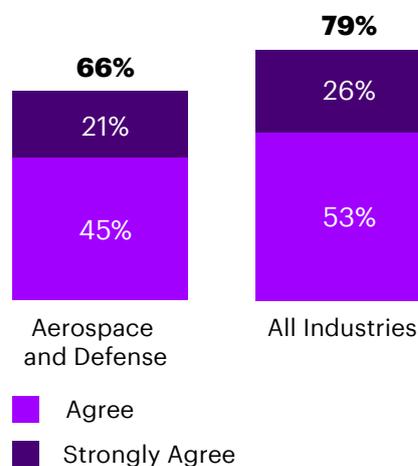
3 The Dilemma of Smart Things

Buying a product is today no longer about purchasing a physical, finished item. Products are conduits for evolving services and experiences.

Companies must work to design their products and ecosystems to accommodate ongoing change. It is a trend that's very evident in the Aerospace and Defense industry. 82% of industry executives expect their connected products and services to have more, or significantly more, updates over the next three years.¹⁰ In addition, many companies' increased focus on aftermarket services supports continuous customer interactions and opportunities to respond better to their changing needs.

Intelligent engines, next-generation flight management systems (FMS), predictive maintenance, inflight connectivity and other connected products are driving a fundamental business model shift. A form of shared ownership is emerging that is seeing aerospace and defense companies continue to retain some control and responsibility over a product or a service sold to airlines or a government. However, at 66%, the trend for new ownership models in aerospace and defense is less marked than in other industries which at 79%, report a more decisive shift (figure 3).¹¹

Figure 3: Dilemma of Smart Things, survey results, proportion offering more variety in ownership models for connected products and/or services



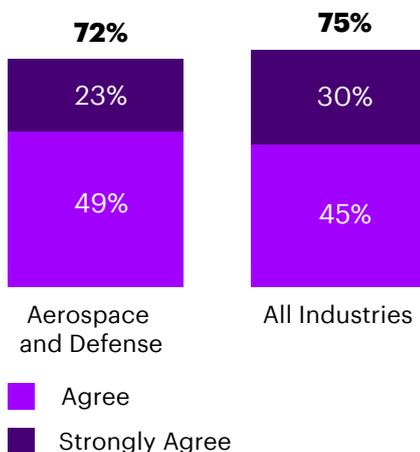
4 Robots in the Wild

As robotic capabilities extend beyond controlled environments, companies' testbeds potentially span the entire world.

As they seek to take advantage of the possibilities that robots operating in uncontrolled environments create, aerospace and defense companies face challenges around talent and how best to establish and govern new forms of human-computer interaction.

But there is plenty of potential: aerospace manufacturing automation, advances in robotics and drone technology, falling hardware costs, and the advent of 5G are enabling robotics capabilities in the open world and uncontrolled environments, expanding opportunities for what aerospace and defense companies can do. Already, 71% of executives believe that robotics will enable the next generation of services.¹² However, while positive about the potential opportunities of 5G, aerospace and defense executives are slight less positive than their peers across industries (figure 4).¹³

Figure 4: Robots in the Wild, survey results, proportion agreeing that 5G networks will expand opportunities for robots to operate in an uncontrolled environment



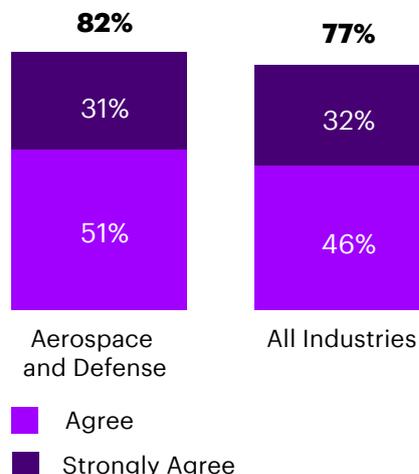
5 Innovation DNA

By focusing on key building blocks of their company's innovation DNA, businesses can transform how they innovate.

Innovation is a clear priority for the Aerospace and Defense industry, with 75% of executives saying that they believe the stakes for innovation have never been higher.¹⁴ 82% of executives also believe that scientific research targeting sustainable development, climate and energy will drive the next wave of innovation,¹⁵ higher than the industry average of 77% (figure 5).

Accordingly, aerospace and defense leaders are taking advantage of a diversity of disruptive technology, ensuring their innovation strategies include efforts from across three major categories. These include the scientific advancements that are moving out of research and development labs into practical applications faster than ever, maturing digital technologies that continue to propel digital transformation journeys, and emerging Distributed Ledger Technology, Artificial Intelligence, Extended Reality, Quantum Computing (DARQ) technologies.

Figure 5: Innovation DNA, survey results, proportion agreeing that the next wave of innovation will be driven by scientific research targeting sustainable development, climate change and energy



A three-point plan for the digital future

The COVID-19 pandemic has arisen at a time when the Aerospace and Defense industry was already addressing tumultuous change. But it could well be the case that the actions companies will need to take to remain strong and deal successfully with the post-pandemic reality are complementary with, and in some cases identical to, the steps required to navigate the digital world.

As they set themselves up for the journey ahead, aerospace and defense companies need to think how they approach ongoing and new challenges in the different segments they serve by transforming digitally around three fundamental dimensions. They need to:

- ✓ **Pivot** towards digital transformation and leverage smart technologies while **balancing** the drive for efficiency with the need to invest for the future.
- ✓ **Adopt** intelligent solutions **powered** by AI.
- ✓ **Invest** in **resiliency** by enabling talent and rotating to the cloud, to increase the speed of **strategy execution**.



Eight imperatives for a digital state of mind

Accenture has identified eight imperatives that put digital at the heart of the business and help build comprehensive digital capabilities across the value chain:

1. | Move to an agile and resilient paradigm

Stand up a rapid response infrastructure with clear ownership of crisis monitoring and tracking, with the agility to enable faster decision making.

2. | Be a data-driven enterprise

Deploy the right skills and culture to extract the full value from company data, drive smarter decisions powered by AI and boost productivity.

3. | Cross the next frontier of services

Execute customer-centric strategies to enable new business models and create new sources of growth.

4. | Embed security at the core

Integrate security and resiliency in the operating model to manage cyber-risk across the enterprise and across the value chain.

5. | Innovate at speed and adapt to the new normal

Protect the health and safety of staff and address people's physical, mental and relational needs so that they can thrive and drive innovation using latest technologies and platforms.

6. | Make manufacturing smart

Enable company production systems to automate and continually adjust their speed and customize products on the fly to match customer needs.

7. | Collaborate across the ecosystem

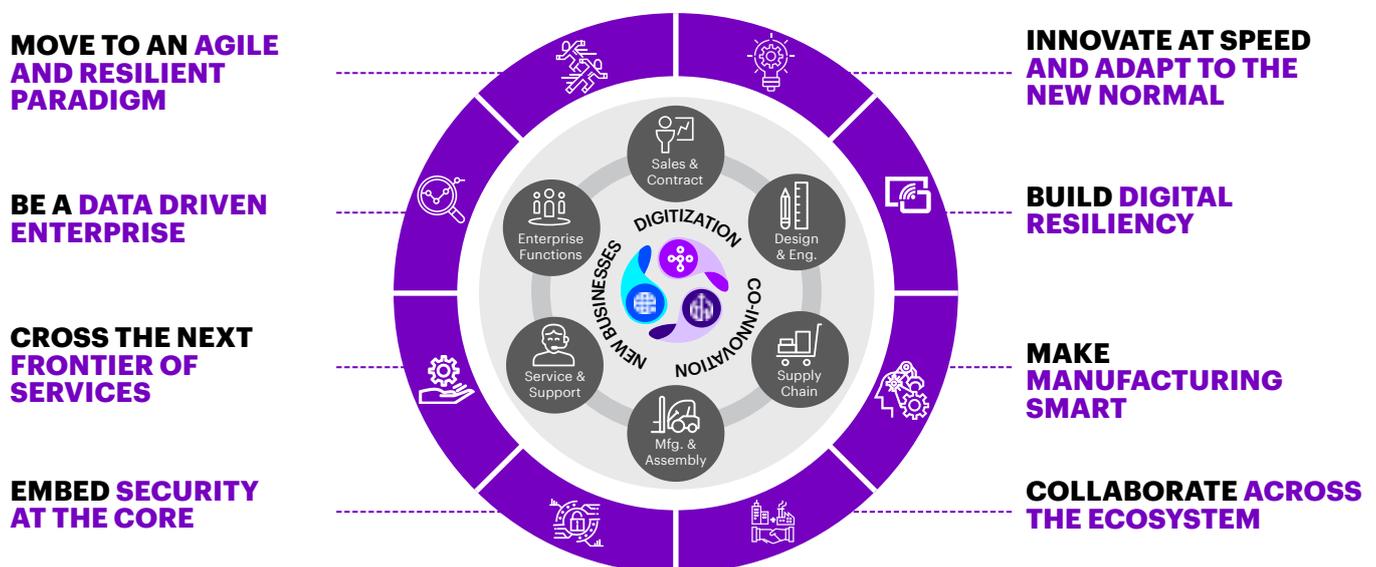
Enable superior execution capabilities with partners.

8. | Build digital resiliency

Ensure seamless integration with cloud strategy and adoption of new digital technologies within and outside the enterprise ecosystem.

Taken together, these imperatives can help aerospace and defense companies plan and prioritize the actions they must take now and next to meet the challenges of COVID-19 and continue their upward journey to becoming resilient, fully- digital enterprises (figure 6).

Figure 6: Eight imperatives for a digital state of mind¹⁶



References

1. Accenture analysis
2. 2020 Accenture Technology Vision aerospace and defense respondents
3. ibid
4. IX.0 Digital Mastery 2020 Survey, aerospace and defense respondents
- 5-15. 2020 Accenture Technology Vision aerospace and defense respondents
16. Accenture analysis, April 2020

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About the Technology Vision research

Accenture Research conducted a global survey of 6,074 business and IT executives to capture insights into the adoption of emerging technologies. The survey, fielded from November 2019 through January 2020, helped identify the key issues and priorities for technology adoption and investment. Respondents were C-level executives and directors at companies across 25 countries and 21 industries, with the majority having annual revenues greater than US\$5 billion. The survey included 87 business and IT executives across 8 countries from the Aerospace and Defense Industry.