

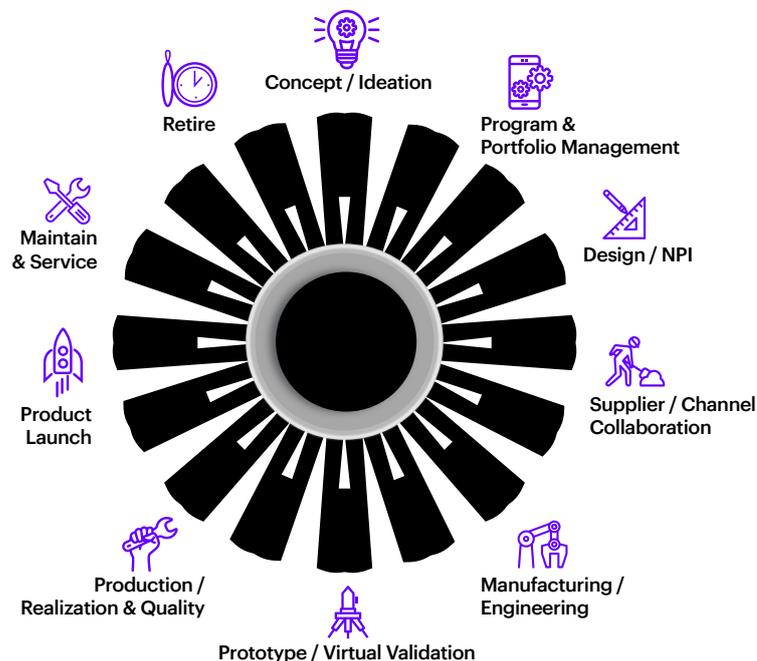
THE FOCUS OF INNOVATION AS AN ENGINE OF GROWTH IS SHIFTING DRAMATICALLY. From an emphasis on new products and services, a core priority now is to deliver new customer experiences powered by digital. To make this happen, Aerospace & Defense (A&D) companies must master the Digital Thread: the flow of data fueling the digital insights behind customer-centric experiences.

Accenture recently completed a market-facing research program among global A&D companies¹. **This aimed to understand the industry’s readiness and adoption of “Digital Thread” and “Digital Twin”** (SEE PAGE 3). Read on to discover what we discovered—and why these findings are so important to A&D companies today.

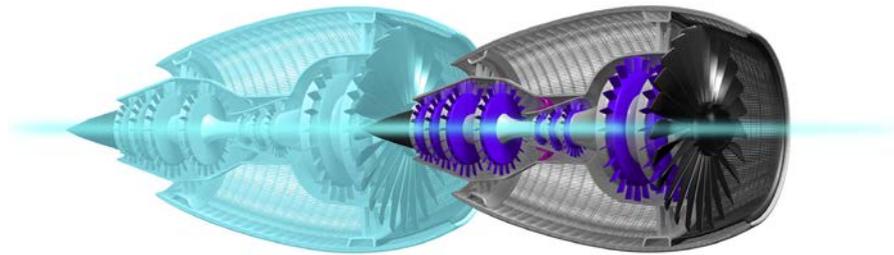
UNLOCK DIGITAL ADVANTAGE

In the A&D industry, dealing with the deluge of data that’s now flowing from the proliferation of connected sensors, devices and components is a massive and pervasive challenge. Nearly three-quarters (74 percent) of A&D companies agree or strongly agree that they’re now inundated with operational data.

But it’s also a source of huge opportunity. To manage the challenge and reap the benefits, two concepts—the Digital Thread and the Digital Twin—are becoming increasingly important in the A&D industry.



DIGITAL PRODUCTS IN VIRTUAL SPACE → PHYSICAL PRODUCTS IN PHYSICAL SPACE



THE DIGITAL TWIN is a digital representation of a physical product (such as an aircraft engine or cabin component). Including xCAD and related engineering information, it incorporates product specifications, geometry models, material properties and associated simulation information.

THE DIGITAL THREAD extends the Digital Twin into a product's entire lifecycle, encompassing all data flows across ideation, design, engineering, performance, manufacturability and serviceability. It's a vital thread that runs through all the organizations and contexts with which a product/service interacts.

As aircraft and other A&D products become ever more connected, they are maturing as platforms, offering up ever-richer potential sources of differentiated value. As they grow and develop, these platforms generate the potential for new services, customer and partner relationships and, crucially, new revenue streams. But it is potential that most have yet to take advantage of. To tap into it, companies must master the Digital Thread which creates a connected value stream through the product and services continuum.

That's the clear imperative. But our research shows that right now, this is not happening: just 7 percent of A&D companies have fully integrated Digital Threads that impact the strategy and/or work of multiple teams.

We found that the use of Digital Twins is much more prevalent, but narrowly focused on achieving efficiencies in today's operations: 97 percent of A&D companies use these enabling technologies for existing and/or new products and services.

In short, the industry appears to be focused on cost optimization more than driving new growth from digital services and data. Just 9 percent of A&D companies say they're successfully achieving both operational efficiency and new business gains.

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REALIZE THE DIGITAL THREAD'S **STRATEGIC PROMISE**

The industry ecosystem is becoming more complex every day. In this new world, the Digital Thread will be at the core—weaving together connected digital services and experiences, built on the product as a platform, and driving whole new sources of revenue.

To fully realize this promise, A&D companies need to address two critical areas.

WEAVING DIGITAL THREADS FOR VALUE

The first is the deployment of Digital Threads to create real value. As a significant strategic imperative, this requires a joint effort from business and IT.

Today, only 27 percent of A&D firms have shared ownership of the Digital Thread and the Digital Twin across business and IT functions. Of all the enterprise systems and processes, this is an area where a true symbiotic commitment is fundamental. While there are clear technical components involved in developing the right systems and protocols, insights that result in effective monetization will necessarily come from the business.

ONLY 27%
**HAVE SHARED
OWNERSHIP OF THE
DIGITAL THREAD
AND DIGITAL TWIN**

DATA COLLABORATION

Second is the ownership and governance of data across the aerospace and defense ecosystems. Our research shows two more likely data ownership models: one which is coordinated among multiple players (43 percent); and a singular model where the Digital Thread is managed centrally (47 percent).

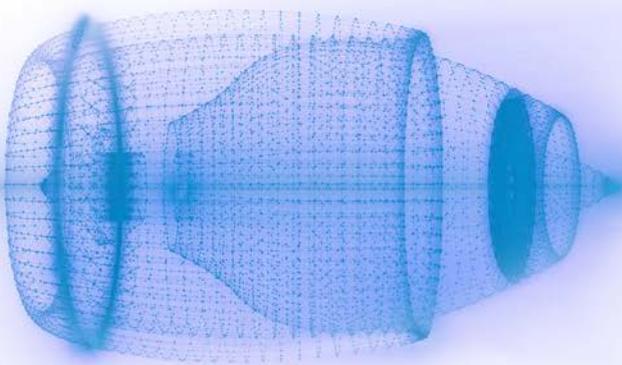
With multiple players involved in the ownership of data, including OEMs, airlines and supply chain partners, a whole host of complexities must be managed.

It is clear that companies grasp the need to collaborate across their ecosystem: 87 percent see supplier and IP management for both hardware and software as part of the Digital Thread in the next three years. But working together effectively raises a number of key questions: How can data be standardized? And who will own those standards and control the IP? How can the data be shared? What incentives will be required to make this happen?

87%
**SEE SUPPLIER AND
IP MANAGEMENT
AS PART OF THEIR
DIGITAL THREAD**

START WEAVING YOUR **DIGITAL THREAD**

Companies need to find answers fast if they want to start weaving the Digital Thread that will provide the fabric of their future success. While their use of Digital Twin is driving greater efficiency, it is the Digital Thread that will enable the journey to new growth. This should be the strategic focus. To achieve this requires a solid commitment from the business and IT to work together and ensure that they manage the challenge of data collaboration as a true partnership. But, they need to act now.



A&D ORGANIZATIONS THAT
SUCCESSFULLY **WEAVE**
THE TRANSFORMATIONAL
DIGITAL THREAD FIRST
WILL GAIN SIGNIFICANT
COMPETITIVE ADVANTAGE.

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SOURCE

- 1 Digital Thread Accenture Research 2017: a global survey of Communications, Media and High Tech, and A&D company senior executives in North America, Europe and Asia Pacific. This aimed to understand and analyse how companies are evolving their use of lifecycle management technologies into new concepts including Digital Threads and Digital Twins.

ABOUT THE RESEARCH

Accenture survey approach and methodology was carried out as an online survey. Accenture polled executives to better understand how their companies are evolving the use of lifecycle management technologies such as digital threads and digital twins. Many see these as avenues to introduce new business models, adapting their workforces and introducing new technologies. 150 businesses from Global 2000 class companies across five industries (aerospace & defense, enterprise technology, consumer technology, communications equipment technology and telecommunications) and nine geographies (US, Canada, UK, France, Germany, Italy, China, Japan, and South Korea) were surveyed. We interviewed C-level executives, Division Presidents and Division Vice Presidents (VPs) of engineering, or their equivalent.

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