

Aerospace and Defense Incumbents Strike Back

Global C-suite Study
19th edition

IBM Institute for
Business Value



Which way to the future?

The signals are utterly bewildering. As digital technologies transform the world, monopolies are winning big-time. Yet collaborative systems are also flourishing, and even in industries where the competition is shrinking there's still plenty of creativity. Little wonder top executives are puzzled.

Aerospace and Defense (A&D) CxOs are no exception. In 2015, they were largely convinced that new markets would present the best opportunities for growth. Today, the pendulum has swung the other way — albeit quite slightly. And where, previously, A&D CxOs were undecided as to whether open innovation or proprietary research would predominate, they now anticipate that internal sources will prove most fruitful (48 percent versus 35 percent). But there are two points on which executives in the sector broadly agree. They expect more emphasis on customer experiences than products over the next few years, and they envisage that most organizations will partner more widely.

A&D CxOs also say there's been a shift in the external influences most likely to affect their organizations in the near future. Technological advances and market forces still top their agendas (in that order), but people skills have trumped geopolitical factors. The A&D market is growing, but not enough young people are studying science, technology, engineering and math to replace the large number of senior engineers and technicians who are due to retire over the next two decades.¹

The IBM Institute for Business Value, in cooperation with Oxford Economics, interviewed 228 CxOs from the Aerospace and Defense industry. These conversations included both quantitative and qualitative responses. The analytical basis for this Aerospace and Defense industry report uses 178 valid responses from the total data sample collected.

More than 12,800 CxOs, representing six C-suite roles, 20 industries and 112 countries, contributed to our latest research. We used the IBM Watson Natural Language Classifier to analyze their contextual responses and ascertain overarching themes. We also used various statistical methods, including cluster analysis and discriminant analysis, to scrutinize the millions of data points we collected.

Reinventors race ahead

In the course of our research, we identified a group of A&D companies that outshine their peers on the path to Digital Reinvention™ (see Figure 1). The A&D Reinventors, as we've called them, focus on developing breakthrough products, services and business models; excel at extracting value from their ecosystems; and actively experiment. Their IT strategies are aligned with their commercial goals, and they're superb at managing change – all of which helps them outperform both financially and as innovators. The remaining A&D enterprises in our sample are less advanced.

Reading the road signs

So what's actually going on? Four topics stand out from our conversations with CxOs and our work with academics:

Dancing with disruption

The path to personalization

The pull of platforms

Innovation in motion.

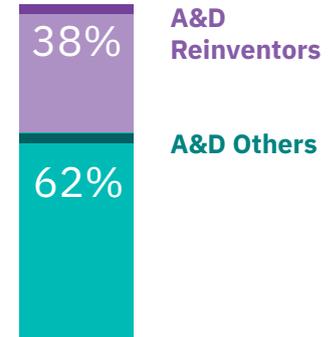
“Digitization is transforming our business and creating new business opportunities, as well as increasing our competitive edge.”

Chief Marketing Officer, Aerospace and Defense, Mexico

Figure 1

A&D split

A&D Reinventors have distinct characteristics that result in differing vantage points



Dancing with disruption

Two years ago, CxOs told us they were deeply worried about digital giants and ankle-biters from other sectors invading their territory. Now, it's not outsiders they're most concerned about: 79 percent of A&D CxOs report that the *real* disruption is coming from innovative industry incumbents – once unwieldy enterprises that have reinvented themselves to thrive in the digital age.

Many of the A&D CxOs we interviewed are bracing themselves for a period of great turmoil, as the blurring of the boundaries between different sectors reshapes their own industry and new technologies come on-stream. But those who head Reinventor organizations are more acutely aware of the danger posed by reinvigorated rivals and far better placed to deal with any turbulence: 74 percent of Reinventors have clearly defined formal strategies for countering disruptive threats, compared with just 42 percent of other A&D firms. Most Reinventors also have a very strong track record of managing organizational change in response to new business trends (see Figure 2).

The Reinventors in our A&D sample are simultaneously investing more heavily in new technologies to help them realize their strategic goals. They're focusing primarily on mobile solutions, the Internet of Things (IoT) and cloud computing, but more than a third of them plan to invest in emerging technologies like artificial intelligence (AI) and robotics. In fact, 47 percent have acquired companies specializing in emerging technologies, whereas only 29 percent of other A&D firms have done the same.

The path to personalization

Connecting with the customer on a personal level is vital these days, but designing compelling personalized experiences is very difficult; it takes a profound understanding of what makes different people tick. Again, A&D Reinventors are ahead of the curve: 82 percent excel at using data to identify unmet customer needs (versus 54 percent of other A&D companies).

However, A&D Reinventors don't just trawl through yottabytes of data. They engage directly with their customers at every stage from product design to post-sale services, consult their partners to get a better picture of the customer experience and analyze detailed journey maps. As a result, 67 percent of A&D Reinventors are effective at creating personalized customer experiences, in contrast with just 48 percent of other A&D firms.

“The digital revolution will have a huge impact on our enterprise, as well as our entire industry. It's not just a matter of introducing new technologies; it's about digitizing your processes, too.”

Chief Marketing Officer, Aerospace and Defense, Israel

The pull of platforms

One of the most exciting recent trends is the emergence of the platform business model, which connects producers directly with users, enabling organizations to grow faster and generate higher profits. While a number of A&D companies use digital platforms to optimize maintenance processes and improve asset productivity, very few operate platform businesses in the true sense of the term, where the orchestrator acts purely as an intermediary. But that may soon change: 16 percent of A&D CxOs are experimenting with the concept and 15 percent plan to reallocate capital for this purpose.

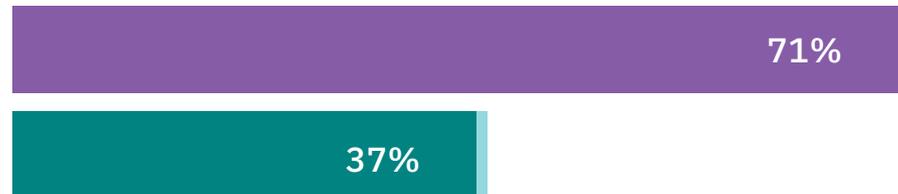
Demand for platforms is likely to grow as customers increasingly insist on an integrated experience, whether they're placing orders for aircraft or supporting soldiers on the battlefield. So what makes a platform work? We identified three "rules" for success: creating value from reciprocity, capitalizing on data and committing to innovation. A&D Reinventors fit this profile. They're more willing to pool resources with their partners than the other A&D companies in our study. They're also more in tune with their partners and more open to the idea of collaborating with competitors. Lastly, A&D Reinventors place more emphasis on innovation: 70 percent aim to fend off competitors primarily by developing new products and services, whereas only 48 percent of other A&D companies pursue the same strategy.

Figure 2

Wired for flexibility

A&D Reinventors are better at managing organizational change

A&D Reinventors
A&D Others



Q: Rate your enterprise's effectiveness at organizational change in response to emerging business trends. (Percentage of respondents choosing "excellent.")

Innovation in motion

The organization of work is altering dramatically as enterprises collaborate to innovate and ecosystems replace go-it-alone entities. A&D Reinventors are in a far better position to adapt than the rest of the sector: 74 percent have C-suites with a strong grasp of how the industry is evolving (versus 55 percent of other A&D firms). The CxOs who lead these companies are also much more effective at articulating a clear corporate strategy.

There's more. The majority of A&D Reinventors are creating nimble enterprises that learn on the fly: 76 percent actively solicit new ideas from employees, compared with just 46 percent of other A&D firms. Moreover, many Reinventors have gone much further: 67 percent have created fluid, cross-functional teams to stimulate continuous learning (versus 43 percent of their industry counterparts).

“We want to make real-time analytics the norm for commercial aerospace. ‘Live’ knowledge of aircraft health will help airlines manage their operations more efficiently and more safely.”

Chief Operating Officer, Aerospace and Defense, United States

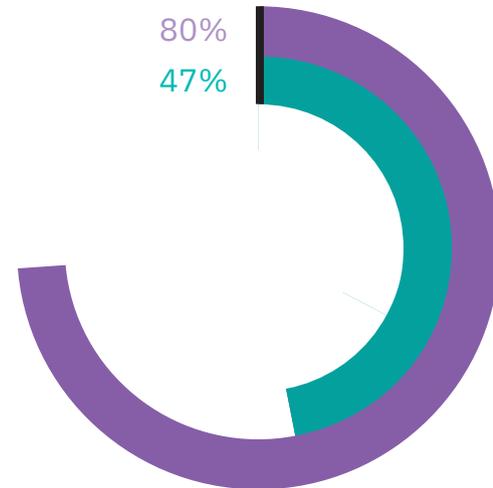
Figure 3

A&D Reinventors

A&D Others

Quick on the uptake

A&D Reinventors reward fast failure as well as successful innovation



Q: To what extent does your enterprise have a culture that rewards both fast failure and successful innovation? (Percentage of respondents choosing “to a large extent.”)

Eighty percent of A&D Reinventors also empower their teams to decide on the best course of action (versus 48 percent of other A&D firms). And most of these companies reward fast failure as well as successful innovation (see Figure 3). In short, A&D Reinventors combine a dynamic vision with an open culture and agile operations – and these, as our research shows, are the three stepping stones to organizational dexterity.

Strengthening advantage: Actions to take now

Embrace disruption. Partner with companies in the A&D industry and beyond to learn from leading practices elsewhere and create exceptional aviation experiences. Foster a culture that welcomes innovations “not invented here.” Engage and disengage rapidly, as your needs dictate.

Exploit the data, reinvent the business. Invest in digital technologies to mine new data sources from every facet of your business, whether it’s aircraft, operational and maintenance services, or customers. Use cognitive solutions to analyze the information and identify new revenue streams. Share insights freely throughout your enterprise and ecosystem to uncover new business models.

Tap the crowd. Harness the intellectual power of consumers and employees to uncover new ideas, insights and opportunities. Utilize different “systems of engagement” to connect through the channels and technologies people prefer.

Related IBM IBV C-suite Program executive reports

To read the full report, “Incumbents Strike Back,” please go to ibm.com/globalcsuitestudy. You can also find copies of our monthly insights and three related C-suite executive reports on IoT, AI and blockchain at the same location.

For more information

To learn more about this IBM Institute for Business Value study, please contact us at iibv@us.ibm.com. Follow @IBMIBV on Twitter, and for a full catalog of our research or to subscribe to our monthly newsletter, visit: ibm.com/iibv

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Notes and sources

- 1 "Workforce." Aerospace Industries Association.
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