



Transforming the Aerospace Platform – Smarter, More Services, More Digital

It's almost too obvious to waste any ink on it: Digitalization is the future of the aeronautics, space, and defence industries. It's the same for almost every other industry sector and, indeed, society in general. But to pioneer the future of our industry, we have to look beyond the obvious efficiency gains of Industry 4.0 and start understanding "digital" as a new way of doing business.

Almost all of the top managers at Aerospace and Defence surveyed by Roland Berger in June 2016¹ believe that digitalization will have a profound effect on our industry within the next five years. There's also widespread consensus about the effect of digitalization on bottom-line efficiency with 82 percent agreeing that digitalization will improve time, cost, and quality performance.

Indeed, inside each of our companies and throughout the supply chain, digitalization has scope to further its potential to make us more efficient. Many aerospace firms are the result of consolidation and have a long way to go towards a harmonized IT landscape, let alone end-to-end product lifecycle management. Airbus Defence and Space is by no

¹ Roland Berger "A&D Management Issues Radar 2016 – Aerospace industry: turning point ahead?" June 2016 https://www.rolandberger.com/publications/publication_pdf/roland_berger_aerospace_industry_turning_point_ahead_160603.pdf
200 Top-Managers from 90 companies in 20 countries.



Dirk Hoke
Chief Executive Officer
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means an exception. After integrating three distinct parts of Airbus, each of which was the result of some form of integration, our first priority was simply to enable effective collaboration and reduce complexity, for example, by bringing all employees into the same domain.

Parallel to this, redesigning our processes along the value chain is a key element of our digital transformation. We have no shortage of ideas on how to employ digital capabilities such as augmented and virtual reality, 3D printing, artificial intelligence, and collective computing. More than 600 digitalization initiatives have already been launched across Airbus. Here's one example: Our facility making solar panels for satellites is piloting real-time production planning, which optimizes the use of material, machines, and the highly specialized skills of our shop-floor employees. The challenge is to create synergies, scale up and deploy the successes, and streamline it all into one new, overarching, digital operating system.

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Being more efficient is not enough

However, bottom-line efficiency is not the end of the digital transformation story. When looking into other industries, new competitors may have disrupted legacy players because they offered the same product or service cheaper or faster. More often than not, they offered it differently. Business model transformation is the pivotal factor in digital disruption.

The thought of being disrupted doesn't come naturally to the aerospace industry. Entry barriers usually are quite high. Development costs for a new aircraft or space program are measured in billions of dollars and production in the hundreds of millions; the safety and reliability standards to certify our products require years of experience; and the market is heavily dependent on governments both for funding and for regulation. Only about every second manager interviewed in the aforementioned study expected digitalization to impact new business models, new products, or new services.

At Airbus, we're not so quick to cast that idea aside. In fact, the strategy of Airbus Defence and Space hinges on making digital our new growth engine. Our market research suggests that digital business models will grow to be far above average. The example of drones is telling. The price of the hardware (high-end commercial drones) plummeted from \$100,000 in 2007 to \$700 six years later and continues to drop. The commercial drone services business, on the other hand, is expected to grow exponentially. A PwC study estimates the total addressable value of drone-powered solutions at over \$127 billion.² Which part of the business would you want to be in?

² PwC "Clarity from above – PwC global report on the commercial applications of drone technology" May 2016 <http://www.pwc.pl/clarityfromabove>

Our golden eggs? Data

The crucial asset for developing new digital business models is data. At Airbus, we're in the fortunate position that our hardware platforms generate a wealth of data only a few companies in the world are able to produce. For example, when you search for the house you would like to buy on Google Maps, there's a 50 percent chance that the image is from one of our satellites. We are one of only two companies worldwide providing global Earth observation images. However, the image may be several years old and if it was taken in summer, the magnificent old oak in the front yard covers a critical part of the roof design that you wanted to check out. Wouldn't it be great if you could ask us for a recent winter image, possibly at an even higher resolution? Or how about images every other day to see the progress of refurbishing work?

Of course, entering into a B2C business model requires some adaptations on the part of an aerospace giant like Airbus Defence and Space. Whether you are a private customer buying real estate, or an insurer verifying claims after a storm, or a farmer determining the state of irrigation of your fields, you can't be bothered with the technical details. Should I take this or that type of satellite? How about throwing drone imagery into the mix? Or operating sensors at Airbus or at a third party? All you want is actionable information – reliable, fit for purpose, and at a fair price.

The underlying concept is a software platform that takes our wealth of data and delivers customer value. It is, of course, more complicated than that. Our data comes in a tremendous number of formats. Potential customers need to be identified and made aware. Each output will need to be tailored to be valuable for a client in their specific situation. Engaging external partners to provide solutions via our platform will make it more attractive. All the while, our information and that of our customers and partners must be fully secure. All these considerations are challenging, yet possible to address. In the case of imagery, we have just embarked on this journey and launched a new entity last month called Airbus Aerial. Just like any other start-up, we're looking to scale up fast!



Digitalization doesn't replace our current products, it enhances them

In addition to completely new, digitally-enabled service offerings, our existing portfolio of aircraft and spacecraft will be boosted through digitalization and become more valuable for our customers. Using big data analysis and artificial intelligence for sensor data from military aircraft, we can evolve maintenance programs and align schedules more closely with the actual service life of parts, thereby decreasing costs. In the next step, predictive maintenance will further increase efficiency for the operator as well as significantly increase availability.

Connectivity and data fusion will make each of our aircraft more versatile, i.e. delivering more value. For example, a tanker aircraft will also be an intelligence hub for fighter aircraft and swarm drones operating in the same theater. In the battlefield of the future, all assets will contribute to a much faster and more comprehensive situational awareness, delivering actionable information to each layer from planning and mission control to the individual soldier. Decisions can be made faster and lift the so-called “fog of war”.

And, of course, the new digital services are also linked to our products, using assets we already have in the air and in space. Through the business model transformation, we will make these assets accessible to new groups of customers and sustain our current portfolio.

In a nutshell, Airbus Defence and Space will continue to be the proud producer of cutting-edge aircraft, launcher systems, and satellites but digitalization will improve our processes, make us faster and more cost effective. In addition, we look to new digital initiatives to develop our business towards a more data-driven approach, which we regard as being quite advantageous.

As an industry, we should not let the comfortable, protected situation of the past lead us to be complacent. Instead, let's embrace the opportunities of digitalization, particularly in business transformation! At Airbus, we are moving ahead. ▶