



# Q&A

What is the Enterprise Technology Strategy, and why does Boeing need one?

**Tracy:** We invest billions of dollars into researching and developing technology to create Boeing's products and services and to provide us a competitive advantage. And we invest these resources throughout the company in multiple organizations and locations around the globe. But to make sure we are in the most competitive position we can be across our businesses, we must get the greatest yield possible out of our technology investment. That requires a strategy.

**Adler:** An enterprise approach starts by stepping back and taking a high-altitude view of what's going on in all facets of Boeing's businesses. The strategy is the way we look at all of this activity and figure out how to optimize technologies, as well as forge a path to the future. This visibility allows us to focus on critical capabilities, enhance the productivity of our research and development teams, keep an active lookout for disruptive technologies, and increase the yield of Boeing's R&D investment. In other words, we get a bigger bang for our buck.

How does Boeing approach its enterprise strategy?

**Tracy:** Working together, Commercial Airplanes President and CEO Jim Albaugh, Defense, Space & Security President and CEO Dennis Muilenburg and I review our strategy, our investments and our

## Focused on the future

An integrated technology strategy strengthens Boeing's ability to innovate and compete

By Candace Heckman and photos by Bob Ferguson

Since its inception nearly 100 years ago, Boeing has relied on the innovation of employees to become the largest aerospace-based company in the world. By specializing in a variety of products and services that span both the commercial and defense markets, as well as adjacent areas, thousands of smart people across the enterprise are expanding possibilities for the future.

*Frontiers* asked John Tracy, Boeing chief technology officer and senior vice president of Engineering, Operations & Technology, and Allen Adler, vice president of Enterprise Technology Strategy, to discuss the company's approach to innovation and how a collaborative strategy helps ensure Boeing remains the world's aerospace leader.

**PHOTO:** Engineering, Operations & Technology's John Tracy, left, and Allen Adler.



results on a regular basis as part of a comprehensive plan to make sure our enterprise strategy is taking the company where we want to go.

This direction is periodically reviewed by our Enterprise Technology Steering Team, which is made up of our senior technology and engineering leaders and outside advisers who meet several times throughout the year. Finally, we calibrate the strategy on a yearly basis and present it to Boeing Chairman, President and CEO Jim McNerney, so it's an integrated effort from the chairman's office to the laboratory bench. The goal is to make sure that everyone working on technology at Boeing is aligned in continuing our technical leadership position in the aerospace industry.

**Adler:** It's taken several years to develop, but now Boeing uses a common technical language, and we've developed eight general areas of technology that we call "domains." Each domain has a leader tasked with keeping tabs on all research and development projects in his or her particular fields and recommending narrowly focused key and core technologies to concentrate the company's investment. The domain leaders meet regularly to collaborate. And they make recommendations to the senior technical leaders of the company.

## How does one strategy serve Boeing's two major business units, which have different customers?

**Adler:** One common element that binds this company is aerospace. We might make distinct products from one end of the company to the other—but the science is the same. A jet fighter might fly differently from a 777, but there are certain fundamental elements of physics that rule both aircraft. The common grounding in science is often where we can find synergy in the technology.



**Tracy:** We might work on different programs, but most of the technical challenges are very similar. Wherever possible, we should avoid conducting duplicate work that's already been done or that someone else is doing. If someone has found a solution to the problem, and it works, then let's use it if we can. Maybe you can improve upon it, but we owe it to ourselves and our customers to avoid reinventing the wheel. The words "invention" and "creation" are important to us at Boeing, but the word "replication" is just as important in the pursuit of innovation.

There's another important area where

one strategy serves both sides of our business, and that lies within our future technology development work. As we look further into the future, it's critical that we identify and pursue those potential game-changing technology areas that could disrupt the competitive landscape and lead to new generations of commercial or defense-related applications.

## What does our enterprise strategy mean for how employees do their jobs?

**Tracy:** By implementing our Enterprise Technology Strategy, the domains will ensure that as an enterprise we will avoid duplications and gaps in our research and development work—we'll limit the overlaps and avoid surprises. Just as important, from the individual researcher's point of view, our technical employees can be sure that whatever they are working on will have an impact on Boeing's future direction and competitiveness.

This strategy provides the line of sight that allows our engineers and scientists to see that they are working on a project that will drive value.

**Adler:** Boeing is so vast that there could be people in the company working on projects that do not—and likely would not—develop value because they are on divergent paths. Business decisions are dynamic, and technology competition is fierce. We need to focus all hands on deck in order to compete. The strategy is there to help us all work better, together. ■

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