Catalyst of innovation

PHOTOS: Matt Ganz (shown in left inset), leads Boeing Research & Technology. LUIS MAGÁN The organization is active in many research fields including environmentally progressive technologies such as advanced air traffic management (background photo); biofuels (middle inset) and improved paints and coatings (right inset). BACKGROUND PHOTO: GETTYIMAGES; BIOFUELS: MARIAN LOCKHART/BOEING; COATINGS: JIM COLEY/BOEING

Advanced research & development group is Boeing's engineering, technology integration hub *By Tom Koehler*

As the leader of Boeing Research & Technology, the company's advanced, central research and development organization, Matt Ganz sometimes is asked his definition of "innovation."

His answer?

"If a cool new technology doesn't provide a benefit to a customer and generate enough money to cover its development costs and make a profit, it isn't innovation, it's art," said Ganz, who is quick to attribute the definition to Apple CEO Steve Jobs and other successful innovators.

"True innovation happens when invention and business insight intersect," he said.

Today, nearly 4,000 Boeing Research & Technology researchers, engineers and support staff work at 23 sites across the United States, at five Boeing technology centers in other countries, and with technology partners around the world. Their jobs involve anticipating, shaping, delivering and supporting the insertion of truly innovative technologies that improve the cycle time, cost, quality and performance of Boeing products and services.

Typically functioning in small but interconnected teams, they are closely integrated with people in Boeing Commercial Airplanes and Defense, Space & Security. On their priority lists is technology research pertaining to the environment, new manufacturing and product design processes, more intelligent and autonomous systems, advanced structures and materials, and more.

"We're not interested in advocacy briefings that tend to overplay the potential or hide the risks of a technology or idea," Ganz said. "We want good information so that we can make good decisions on how to invest our resources and provide the right solutions for the success of Boeing and our customers today and in the future."

As a key element of Boeing Engineering, Operations & Technology, which has the charter to establish technical excellence across the enterprise, Boeing Research & Technology serves as an engineering and technology integration hub—driving efficiency and a "One Boeing" approach into product and process standards and maintaining strategically important engineering and technical capabilities, especially during gaps between program starts and stops.

The organization doubled to its present size in January 2010, when nearly 1,000 materials and process technology employees assigned to Commercial Airplanes joined, along with about 1,000 materials, processes and physics and manufacturing, research and development employees from Defense, Space & Security. In addition, experts in product standards from Shared Services Group also became part of Boeing Research & Technology at the time.

The move has saved Boeing millions of dollars through the implementation of common research-and-technology processes and the elimination of redundancy, Ganz said, adding: "It's been a great example of the value and effectiveness of taking a One Boeing approach."

In an example of cross-company teamwork, a team of engineers from Boeing Research & Technology and Commercial Airplanes recently collaborated to create a lightning protection system and health-monitoring system for the leading edge flaps of the 747-8. The innovative solution and the process of developing it earned wide recognition inside the company. It was described by several team members as a highlight of their careers.

What's next for the organization that has been described by people inside and outside of the company as "the catalyst of innovation" for Boeing?

At the top of the priority list is a continued focus on collaborative work with top technical talent at universities, suppliers, and government and private research centers throughout the world, Ganz said. Boeing Research & Technology has more than 300 active international research-and-technology partners, and this number is expected to grow in the years ahead as the organization's technologists continue to scout the world for innovative technologies that can benefit Boeing products.

"During the past several years, BR&T's technology work outside of the U.S. has helped to differentiate Boeing during sales campaigns and provided additional options for the business units to meet industrial participation commitments in countries that have bought Boeing products," Ganz said.

Another high priority will be a continued focus on environmentally progressive technologies—technologies that save fuel and reduce toxic emissions and waste—such as advanced air traffic management systems, lighter-weight materials and structures, improved paints and coatings, and biofuels. ■

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