

Bridging the Gap for Skilled Workers in Modern Manufacturing

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Bob Leduc is the president of Pratt & Whitney, a division of United Technologies Corp. (NYSE: UTX), a world leader in the design, manufacture and service of aircraft engines and auxiliary power units.

Over the last two decades, the manufacturing industry has accelerated its evolution significantly to meet the growing demands of global customers. That is true of the aerospace industry, and it's certainly true for Pratt & Whitney.

To produce the world's most advanced aircraft engines, we have embraced modern technologies in all aspects of our work, from additive manufacturing and the world's first automated horizontal assembly lines, to closed-door machining and robotic assembly and automated product inspection. We are creating and working with new materials, and harnessing the power of data to accelerate the innovation cycle. With \$1.3 billion being invested into such state-of-the-art technologies and facility upgrades, we are transforming our global operations to meet our commitments to our commercial, private, and military customers.

As we invest and introduce more modern technologies into our facilities, it's also imperative that we innovate the role of our people, who are and will always be the key factor of our success. At Pratt & Whitney, it's why we look for passionate, smart people with diverse experiences who can generate ideas and drive the kind of innovation that can help us change the world.

But frankly speaking, advanced manufacturing's future is questionable, if we don't invest now to grow the future talent pool – both entry-level and leadership positions. In the U.S. alone, it's estimated that over the next decade nearly 3.5 million people will be needed to fill manufacturing jobs, with 2 million jobs likely to be unfilled due to a significant skills gap in the workforce. Baby boomers are now retiring and taking their knowledge with them. At the other end of the labor pool, negative perceptions persist among high schoolers and college-aged students about the viability of a manufacturing career in the 21st century. Left unchecked, the skills gap for highly qualified workers in the manufacturing sector will only grow wider.

Looking further out, to the year 2030, we face some astonishing trends that will require the full and immediate attention of the manufacturing industry, as well as policy makers and educational institutions.

This is most certainly a growth industry that will increase employment around the world. The global urban population is expected to grow by 1 billion people, bringing with it ever increasing demands for commercial air travel. If trends continue and market forecasts prove true, the number of commercial aircraft in service today will grow from approximately 27,000 to 47,000, with revenue passenger miles increasing from 4 trillion today to 9 trillion by 2030. Commercial air travel connects people and grows economies – these forecasts affect all of us. For those of us working in aerospace, it should be clear that this level of growth requires a fully staffed and highly trained manufacturing workforce.

In order to be ready for that challenge, we have hired more than 7,200 new employees over the past 18 months and anticipate hiring approximately 18,000 more employees at Pratt & Whitney through 2026. We recognize the growing need for cleaner, greener, world-changing commercial engines—not to mention regional, business aircraft, and next generation military engines—which is why we are ramping up hiring to support production levels not seen at our company since World War II.

From engineering and program management to engine assembly on the shop floor, thousands of people can find rewarding and fulfilling careers in modern manufacturing facilities like Pratt & Whitney's. Most of these jobs require diverse skills and a knack for fundamental problem-solving and good judgement.

We are developing a skills pipeline through training partnerships with community colleges and technical schools in the areas where we operate. We will need to rely heavily on those partnerships to find and develop the manufacturing skills we need to compete. We are also developing recruiting programs to reach out to experienced workers and professionals returning to the workforce, such as our new [Re-Empower program](#), and we are purposefully acting to ensure we attract and retain a diversity of talent at all levels in the company. As part of our commitment, we have partnered with [Paradigm for Parity](#) to pledge our commitment to gender parity in leadership positions by 2030. We will do so by adopting P4P's five-step program, which include minimizing or eliminating unconscious bias, broadening the talent pool, and providing both mentorship and sponsorship to women of potential.

But clearly, there is only so much an individual company can do to build a talent pipeline. We need stronger support from local and state governments to strengthen these programs.

We need a similar investment in skills development by our elected officials and governments around the world in order to meet the future's potential. The benefits are clear: better products that create better, secure jobs, with engines that fuel local and regional economies.