

# 50 Years of Innovation

In January 1965, two graduates of the Massachusetts Institute of Technology (MIT) sat in their apartment in Cambridge, Massachusetts, preparing to file papers to launch their startup. They had what they believed was a golden opportunity.

Ray Stata and Matt Lorber were on the cusp of the electronics revolution. Their new company would make operational amplifiers, a ubiquitous building block for analog products and systems. But as they filled out the paperwork for incorporation, they struggled with what to call their new venture.

They listed the names of companies they thought were relevant. At the top of the list was Digital Equipment Corporation (DEC), founded in 1957 and one of many successful technology companies taking root along Massachusetts' Route 128. However, their company would focus on analog, not digital, technology. What about Analog Equipment? That wasn't quite right. They would be making components, not equipment. Farther down the list, another company—Data Device Corporation—caught their eye. Yes, op amps were devices. The combination of those two phrases described what the company would make, so they wrote "Analog Devices" in as the name of the corporate entity.

Stata and Lorber never dreamed that their new venture would grow over the

next 50 years into a multibillion-dollar Fortune 1000 company. Analog Devices Inc. (ADI) would survive the ups and downs of the electronics industry, even while other famous New England giants (including DEC) stumbled and fell. ADI would become one of the few semiconductor companies to not only keep making its own chips (and in the United States, no less) but also to stay on the East Coast. As digital technology proliferated, analog was considered antiquated technology. Nonetheless, ADI stubbornly refused to change its name or even its logo, a simple triangle designed in 1965.

This is a technology as subtle and complex as the world itself. It deals with turning physical phenomena into electrical signals and processing these signals to get useful information. Humans experience the world through their senses: seeing with their eyes, hearing with their ears, feeling temperature and pressure with their skin. The range of values that these "human sensors" detect—across light, frequency and temperature—consists of infinite shades of gray. Analog circuits are the "analog" of these real-world signals. They detect, measure and process the varying shades of these physical phenomena.

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**“The speed at which an organization learns is its only sustainable competitive advantage.”**

## **RAY STATA**

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ADI has stuck to its knitting because, from day one, it realized the importance of analog technology. Although the spotlight shifted to digital technology in the 1980s and '90s, the show could not go on without the critical role analog played behind the curtain. Consumers marvel at the magic of modern technology, including smartphones. They sit securely in the safety of cars with air bags and advanced driver-assistance systems. None of these conveniences would be possible without analog technology.

Digital technology, on the other hand, deals with numeric representations of analog values. A digital value is made up of ones and zeroes. Although people often refer to the world becoming digital, analog technology is the bridge between physical and digital.

ADI has built a consistently profitable business based on that fact. It grew from a fledgling startup that barely scraped by in 1965 to a company with sales of \$3.4 billion by its 50th year. That is an