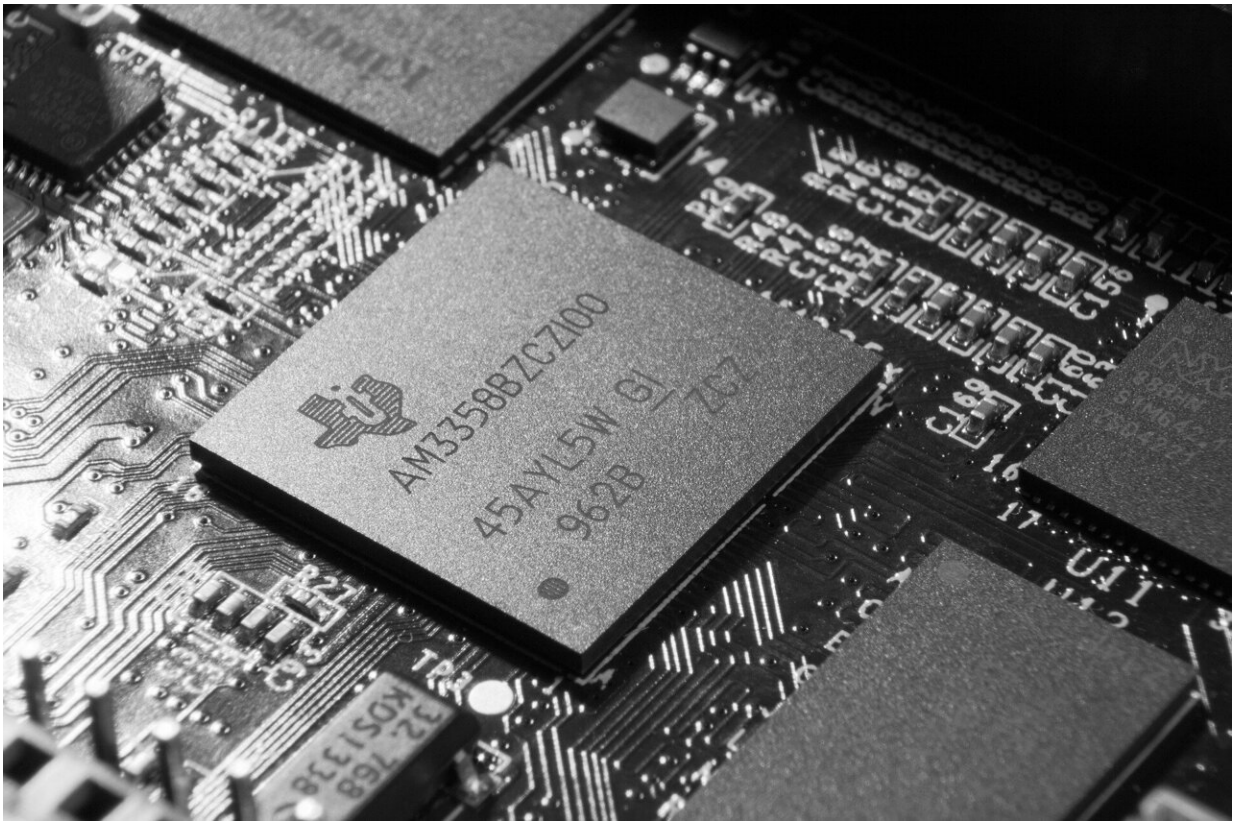
How Texas Instruments went from phasing out this chip plant to modernizing it

July 18 2022, by Maggie Eastland



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Before Texas Instruments Inc. selected Sherman for a $30 billion expansion, the Dallas-based analog chip producer was packing its bags to leave.

In January 2020, Texas Instruments told Sherman city officials it would be closing a fabrication plant that turns 150-millimeter silicon wafers into semiconductors used in everything from autos to industrial machinery.

Kent Sharp was still new in his position as president of the Sherman Economic Development Corporation when that bombshell reached his desk. TI is one of the city's largest private employers.

"Oh God, I just got here. Please don't do that," he remembers thinking.

Texas Instruments told city officials the plant was too outdated for modern manufacturing processes and would be phased out over the next three years, said Sherman Mayor David Plyler.

"They had been in our community for about 60 years, so you can imagine our disappointment when they said they were closing," Plyler said.

The city braced to lose 500 jobs while holding out hope that a new industrial employer would eventually move in. Over the next year and a half, though, mass layoffs never came.

"We didn't notice that anybody had lost their job there," Plyler said.

Sherman's advantages

More than a year later, the analog chip producer made a u-turn and announced it had selected Sherman for a $30 billion expansion project to build up to four new fabrication plants.

The original 150-millimeter wafer facility in Sherman is still expected to end operations in 2024 or 2025, in line with Texas Instruments' original

plan disclosed to the city in January 2020. The 300-millimeter facilities under construction are part of the company's "investment in long-term capacity planning," said spokeswoman Ellen Fishpaw.

Why the Sherman boomerang?

"We have strong relationships and support from the local Sherman community," Fishpaw said. "Sherman provides some unique advantages with regard to access to talent and an existing supplier base."

More broadly, Texas Instruments is known for its long-term strategy with analog chips, embedded processors and its other products. In 2021, analog sales drove 77% of the company's $18.3 billion in revenue. Analog chips aren't as technologically sophisticated as most semiconductors, but they are ubiquitous. Analogs link the physical and digital worlds. Sensors that measure temperature, pressure and other physical signals rely on these chips, which typically cost less than $1. As the world continues to digitize, demand for analog chips will continue to grow, especially as electric vehicles gain in prominence.

Prioritizing long-term demand over short-term impacts worked during 2020, and Texas Instruments is following the script again with new Sherman and Richardson facilities.

When many semiconductor companies were trimming production during uncertain pandemic conditions, Texas Instruments did just the opposite.

"You guys were one of the few folks that actually built inventory in 2020," Bernstein semiconductor analyst Stacy Rasgon said during a conference call with the company June 2.

CEO Rich Templeton said the company made the right choice.

"April of 2020, when we said we're going to keep the factories running, there was this kind of general dismay of 'What are you doing?' We said, 'No, trust me, it's really the right move,' and it really paid off," Templeton said.

Inventory built up during the pandemic lasted until the first quarter of 2021.

"Eventually they started getting shortages too, but they were a bit better prepared than a lot of their peers in 2020 because they learned the lesson from 2008," Rasgon said.

Chip producers scaled back production in the 2008 financial crisis only to be caught flat-footed when demand roared back in 2009.

The long-term view

Texas Instruments was able to produce and store inventory in 2020 because it specializes in analog chips with long shelf lives for automotive and industrial customers.

"What [TI is] selling, especially now, doesn't go stale. There's no real long-term impact. You ship it today. You ship it tomorrow. What's the difference?" Rasgon said.

Extra inventory from the early pandemic days is now depleted, but Texas Instruments continues to peer years down the road instead of trying to micromanage short-term supply.

Templeton said the new Sherman and Richardson facilities are part of a "15-year road map," and each will produce close to $6 billion in annual revenue once running at full capacity. That could take a few years, depending on construction time and chip demand. The shell of a second

300-millimeter plant in Richardson is complete and the plant is now being equipped. That roughly $3.1 billion investment will be ready to start production in the second half of this year.

Texas Instruments is placing all this momentum behind 300-millimeter wafer chip production rather than 150-millimeter wafers. Larger wafers mean more chips per wafer, which typically boosts productivity by 4% annually, according to Smithsonian research.

The company was the first to begin producing analog chips from 300-millimeter wafers, buying technology and equipment from bankrupt industry players for pennies on the dollar after the financial crisis, Rasgon said. The Sherman and Richardson projects will require more expensive new equipment this time around, but Texas Instruments is confident in its business model.

"It's great to get equipment at 10 cents on $1," Templeton said. "But the real magic of 300-millimeter wafer fabs is 300-millimeter, not what you pay for it."

Texas Instruments' products are used by more than 100,000 customers who make everything from consumer electronics to space rockets, giving it a reach that often acts as a bellwether of demand across the economy. The company reports its next quarterly results July 26.

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Citation: How Texas Instruments went from phasing out this chip plant to modernizing it (2022, July 18) retrieved 13 March 2024 from https://techxplore.com/news/2022-07-texas-instruments-

phasing-chip-modernizing.html

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