

## **How Theranos Mismanaged Its Way to Failure**

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**Abstract:** Theranos was a healthcare startup that collapsed due to major operational failures.

This paper uses operations management tools to analyze its issues in quality control, capacity planning, and financial strategy. Break-even analysis and process capacity modeling reveal how its operations didn't support its goals. The case shows why strong operations are key to building a sustainable business.

## **Introduction:**

Theranos was founded in 2003 by Elizabeth Holmes, who set out to shake up the healthcare world with a bold vision: to make blood testing simpler, faster, and cheaper. The company said its signature device, the Edison, could run hundreds of diagnostic tests from just a few drops of blood taken with a finger prick. These huge promises helped Theranos pull in nearly \$1 billion in funding and hit a peak valuation of \$9 billion (O'Brien, CNN). Holmes became a media darling and was praised as a trailblazing entrepreneur. But behind the scenes, the company struggled to turn that vision into something that actually worked and could scale.

While Theranos's collapse is often blamed on unethical behavior, like misleading investors and patients, this paper takes a different angle: the breakdown of operations management. Ethics are clearly important, but without solid operations, no company can survive for long. This paper looks at three areas where Theranos dropped the ball operationally: quality control, managing capacity, and financial planning. It also brings in some tools from class, like break-even analysis and process capacity, to show why the business model was flawed from the start.

As Stevenson notes in our textbook, operations management is about syncing up a company's people, resources, and processes with its goals to create real value (Stevenson, pg. 15). Theranos missed the mark almost entirely. They didn't thoroughly test their equipment, they overestimated what their tech could do, and they tried to grow way too fast without proving the product actually worked. By looking at the company through an operations lens, we can see how even the most exciting ideas can crash without a strong system behind them.

## **Body 1:**

One of Theranos's biggest operational failures was its complete lack of effective quality control systems. In any healthcare setting, having strong quality standards is absolutely necessary not just to meet regulations, but to make sure results are accurate and patients stay safe. Theranos repeatedly ignored that. Even though the Edison device gave inconsistent results, it was still used on real patients in Walgreens clinics. According to CNN's timeline, federal regulators eventually said Theranos's California lab posed "immediate jeopardy to patient health" because of major testing errors (O'Brien, CNN). After that, the company had to void two full years of test results, basically admitting their technology couldn't meet even the most basic performance standards (O'Brien, CNN).

In operations management, quality control isn't just a suggestion it's a system. It involves regular testing, tracking performance, and constantly trying to improve. Stevenson explains that good quality management means setting up procedures like inspections, documentation, and using stats to monitor accuracy (Stevenson, pg. 259). But Theranos didn't do any of that. When their machines didn't work, they secretly used traditional third-party analyzers for most of their tests even though they kept promoting the Edison as the core product (Carreyrou, pg. 84). That disconnect between what they said and what they actually did shows just how little operational integrity they had.

If Theranos had followed standard quality practices like ISO guidelines, Six Sigma, or even just basic internal checks they could have caught a lot of problems early. But instead, they focused on secrecy and speed, not process. This whole situation is a perfect example of how skipping over quality assurance can completely wreck a company's operations, especially in fields where precision and trust matter most.

## Body 2:

Another major operational failure at Theranos was how the company misrepresented what its devices could actually handle. Theranos claimed that its Edison machine could run over 200 diagnostic tests using just one drop of blood. Not only was that not backed by science, but it also wasn't even possible given how the device worked in practice. Carreyrou's investigation found that the Edison could only manage a few tests, and even those had shaky accuracy. It also broke down often during basic procedures (Carreyrou, pg. 105). Still, Theranos continued to market the device as fully functional and ready to scale, which misled both investors and patients and seriously hurt the company's future.

From an operations management standpoint, this was a failure to match the company's process capacity with its business goals. Stevenson defines process capacity as the most output a system can give under normal conditions (Stevenson, pg. 111). Figuring that out means thinking about things like how long each cycle takes, how many resources are available, and how efficient each step is. Say the Edison could realistically do one test every 10 minutes that means only about 48 tests during an 8-hour shift. That's a far cry from the hundreds per hour that Theranos claimed. This mismatch shows a clear misunderstanding or maybe even a disregard for how capacity planning is supposed to work.

On top of that, Theranos didn't plan for bottlenecks, which made everything worse. They tried to scale up operations without confirming their process was stable or repeatable. This is a classic case of overestimating capacity trying to grow too fast without the systems to back it up. In a field like healthcare, where speed and accuracy really matter, poor capacity management doesn't just slow things down it can actually be dangerous. Theranos is a clear example of what happens when big dreams get ahead of what your operations can realistically deliver.

### **Body 3:**

Along with problems in quality control and capacity planning, a big part of Theranos's downfall came from completely misunderstanding its financial and operational break-even point. The company burned through hundreds of millions in investor cash without ever showing that its business model could actually work. According to CNN, Theranos raised more than \$945 million and hit a \$9 billion valuation at its peak, but it never delivered a reliable product (O'Brien, CNN). Instead, the company poured money into R&D, lawsuits, and flashy marketing campaigns, all while struggling to make consistent or scalable revenue. Despite that, it launched in Walgreens clinics and tried to expand nationwide before its tech was even proven to work.

In operations management, break-even analysis is one of the most basic but important tools it helps businesses figure out how much they need to sell to cover both fixed and variable costs. Stevenson defines the break-even point as the level of output where total revenue equals total costs (Stevenson, pg. 154). For example, if Theranos had \$500 million in fixed costs and made \$10 per test with \$3 in variable costs, they would have needed to run more than 71 million tests just to break even. That was never realistic, given their limited output and all the problems with test accuracy. Making things worse, the company later voided two years of test results, so even many of the tests they did run couldn't count toward real revenue (O'Brien, CNN).

This gap between financial goals and what their operations could actually handle was a serious failure in planning. Theranos expanded way too fast without confirming if the business could support itself or make back its costs. In doing so, it ignored one of the most important lessons in operations management: you have to test your business model before you try to grow. If the leadership had done even a simple break-even analysis, they might've seen the risks and avoided growing too fast and possibly even saved the company.

## **Conclusion:**

Theranos is often remembered as one of the most shocking fraud cases to come out of Silicon Valley, but its collapse wasn't just about bad ethics it was also a textbook example of failed operations management. The company didn't bother to put basic quality control systems in place, exaggerated what its technology could do, and never ran a realistic break-even analysis. These weren't just small mistakes they were deep, system-wide failures that showed a complete lack of respect for the core tools and principles that help businesses succeed. As Stevenson points out, good operations require a clear connection between resources, processes, and goals (Stevenson, pg. 15). Theranos missed that connection entirely.

When you view the story from an operations perspective, it's obvious that big dreams and media buzz can't fix weak internal systems. In industries like healthcare where lives, trust, and accuracy are all on the line companies need to do more than just follow ethical rules. They also have to use proven operations tools like quality checks, capacity planning, and financial modeling. If Theranos had slowed down to review its systems instead of racing for growth and attention, the outcome could've been very different.

Looking forward, this case brings up two key questions. First, how can regulators create clear operational audit standards for new healthcare tech companies? And second, how can automation and data analytics be used to strengthen internal quality control? These are important areas for future research and policy. At the end of the day, Theranos is a powerful example that operations management isn't just something in the background it's what keeps a company running and sustainable in the long term.

### **Works Cited:**

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