

## Part 3 – Utilitarian Analysis

I would recap Johnny's task at hand and his options.

His boss at Theranos just told him to fake some data for the big demo that was coming up soon. Johnny was a decent guy, and he was struggling internally because he could not afford to lose his job, but he did not want to do anything unethical either.

Johnny came to me for advice and to discuss his options. During our discussion, Johnny and I concluded that he has three options.

### **Option 1.**

Johnny can help fake those data and actively support the deception of Theranos.

Johnny believes that the "end would justify the mean". As a senior developer with a strong chemistry background, Johnny believes that Theranos can get a technological breakthrough within the next two years. In other words, If Theranos can successfully receive sufficient funds after the next demo, they can deliver a fully functional Edison Machine at the end of 2019.

While faking those data violates his ethical code of conduct, the product that Theranos intend to produce will significantly benefit society by decreasing the average blood testing cost down from \$30 to \$3.

### **Option 2.**

Johnny would still stay in the company and continue to work on product development, but he would not actively help Theranos fake any test data.

Because Johnny's skill is irreplaceable (not at all in any real-life situation but we must make some assumptions here), Theranos will not have a successful demo without Johnny's help.

The consequence for this action would mean Theranos will, for sure, fail the demo and lose some very important funding from the investors.

By Johnny's estimation, this would prolong the development phase from 2019 to 2029.

### **Option 3.**

Johnny can quit the job on the spot, go to media and tell the public about what Theranos plans to do.

While Johnny might find some inner peace by taking this option, Theranos' reputation will be destroyed and never finish their product.

### **Evaluating social benefit gain based on Johnny's choice.**

In the United States alone, 13 billion laboratory tests are performed each year. If we assume 30% of the total blood test can be performed using the Edison Machine, and the Edison Machine can decrease those blood cost from \$30 to 3 dollars.

By fully automating simple blood tests using the Edison Machine, laboratory technicians can also free up the workload and focus on some other tests that demand higher precision and human involvements. This would start a positive chain reaction and decrease another 20% of the blood test cost from \$120 to \$100.

Finally, we evaluate the cost-saving benefit of using the Edison Machine until 2035, since option 2 influences development time.

**Option 1:**

13 billion x 30% (amount of blood test done on the Edison Machine) x \$27 (money US citizen saved) = 105.3 billions

13 billion x 20% x (\$120-\$100) (cost saving benefit of other blood test benefited from partial automation) = 52 billions

(105.3 + 52) billions x (2035 – 2019) = **2.517 trillion**

If Johnny were to pick option 1, he would save the US citizen **2.517 trillion by the end of 2035.**

**Option 2:**

13 billion x 30% (amount of blood test done on the Edison Machine) x \$27 (money US citizen saved) = 105.3 billions

13 billion x 20% x (\$120-\$100) (cost saving benefit of other blood test benefited from partial automation) = 52 billions

(105.3 + 52) billions x (2035 – 2029) = 944 billions

If Johnny were to pick option 2, he would save the US citizen **944 billion by the end of 2035.**

**Option 3:**

If Johnny were to pick option 2, he would save the US citizen **a big fat 0** since the Edison Machine will never be delivered due to Johnny whistleblowing.

**Conclusion:**

Based on our analysis, the most ethical thing to do, based on utilitarianism, is for Johnny to actively help Theranos deceiving their investors and deliver their product as fast as possible.