

ESD.290 Special Topics in Supply Chain Management

Assignment: Session 3

1. You are management at a semiconductor company. Currently you manufacture a low cost tag, which requires 7 mask layers, 1 metal layer, 2 poly layers and you sell at 30,000 wafers per year (about 114,000 dies per wafer). You are trying to create a low cost super-tag. It has more functionality than a regular low cost tag, so it requires at least 20 mask layers, 5 metal layers and 4 poly layers. What is the cost of the new tag? Are you better off hiring a scientist to reduce the number of metal layers to 3 and poly to 2 with a new process or hiring a world-class marketer to increase sales to 50,000 wafers per year? Can you achieve the same result by hiring an expert negotiator to bring down wafer costs to \$100/wafer or an HR consultant who reduces everyone's salary by 15%?
2. You also own the tag assembly. If you are not near the 5c a tag price point, should you buy a new assembly machine that a graduate student at MIT just designed that costs \$600k and can process 20000 units per hour?

Note: You should not need to modify variables in any sheets other than the input, input driver, input data and cost & input sheets.

3. How would you structure capex (cost) calculations for costing the entire RFID system? This question is meant to get your thoughts on the right input/provisioning variables and calculations required to cost the entire system. We are only expecting ideas and thoughts – but if you are on a roll, feel free to innovate for extra points.