### LAB # 4: Review of Economics – Part 2

***Note: Use this lab for your senior design report***

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**Venture Name:** Adaptive Spectrum Sensor

**A: Cost and Pricing Revision (50 points)**

***If you are creating a product,*** *identify the cost of materials, testing, and manufacturing at multiple quantities (i.e. 10, 100, 1000, etc.). Identify the margins for your retailers and/or distributors and determine your selling price at each quantity. Based on the selling price, what is your estimated profit per unit? Lastly, give a reasonable estimate of how many units you expect to sell in year one. Feel free to expand on any of the items below.*

Cost of Materials:

Quantity 10: 4000

Quantity 100: 3700

Quantity 1000: 3400

Materials include a laptop, 2xSoftware Defined Radio, Ethernet cables, rf cables, antennas. All parts would qualify for a discount if purchased in bulk.

Cost of Testing and Manufacturing:

Assuming costs are per unit

Quantity 1: 2000

Quantity 2: 2000

Quantity 3: 2000

Manufacturing is not a factor as the products are off the shelf. Labor costs are fixed, so cost per unit would be identical.

Selling Price:

Adding slight markup to the sum of the previous two costs…

Quantity 1: 15000

Quantity 2: 14500

Quantity 3: 14100

Profit per Unit:

Quantity 1: 9000

Quantity 2: 8800

Quantity 3: 8700

Number of units estimated to be sold in year one: 35

***If you are not creating a product,*** *estimate the total project duration, number of workers needed over that duration, salaries or hourly pay for those workers, cost of machinery/materials, and any other necessary expenditures.*

Total Project Duration: .5 years

Number of Workers Needed: 5

Payment Breakdown for Workers: 70,000/year

Cost of Machinery/Materials: 5000 (computers for development)

Other:10000 (just in case…)

Total Cost: 190,000

**B: Revenue Projection, Breakeven Point, Gross Margin, and Overall Evaluation (75 points)**

*Use the information you provided in Section A to estimate the items below.*

***If you are creating a product,*** *calculate your revenue for year one. Identify your breakeven point and gross margin. What does this mean for someone investing in your product?*

*(NOTE: Gross margin (%) = (Revenue – cost of sales)/Revenue)*

Revenue projected at EOY 1: 315,000

Profit at EOY 1: 125,000

Breakeven Point: 190,000

Gross Margin: 39.68%

What does this mean for an investor?

Based on the financial projections, we will make a profit of 40% on each dollar spent.

***If you are not creating a product,*** *determine the price of competing processes. This may include competing organizations or current practices. Calculate the amount of cost savings an investor would experience by using your process. Calculate the breakeven point between the initial investment and amount of yearly savings. What does this mean for someone investing in your process? If there is not a breakeven point, explain why someone should invest in your process instead of a competitor.*

Price:

Competitor 1: 50,000

Competitor 2: 150,000

Customer/Investor Cost Savings:

35,000 per unit

Breakeven Point:

Ours costs less immediately.

What does this mean for an investor?

There is an immediate incentive to go with our product.

Why should someone invest in your process?

Repurposeable hardware

Low cost

Evolves over time (one time purchase will last a long time)

Machine learning