

IENG377 Avionics Company Project:

You work at an avionics manufacturing company and are part of a team that will evaluate the company's investment alternatives. The company can invest in the following:

- Invest \$5.9 million for a new AI autonomous flight system.
 - Implementation and training of employees costs \$70,000
 - 1st year savings is \$1,250,000. The amount goes up each year by 3.5% inflation.
 - 8 year life
 - \$190,000 Year 8
 - Use MACRS GDS 5 year recovery
- Update current manufacturing, use one of the following 2 options:
 - Buy 10 new programmable robots for a flexible manufacturing work cell to replace old machinery
 - Buy from German Company for 300,000 Euro's each
 - Other information for all 10 robots combined below:
 - Shipping Handling Insurance: \$9000
 - Installation: \$29000
 - Specialized Training: \$21000
 - Market Value \$210,000 year 8.
 - Savings in labor and energy costs \$710,000 per year in 1st year. Assume inflation rate of 3.5% for labor and energy costs per year.
 - Sell old machines for \$90,000 now.
 - Use MACRS GDS 5 year recovery for robots and old machines
 - Life 8 years
 - Upgrade current machinery
 - Current machines have a 8 year life and were purchased 5 years ago at \$2,900,000
 - Invest \$980,000 in upgrade costs to extend the life of the machines for another 8 years
 - Savings in labor resulting from upgrade, \$160,000 per year in 1st year dollars. Assume 3.5% inflation rate on labor rate.
 - Market Value \$195,000 year 8.
 - For depreciation for this option complete the depreciation for the last 3 years of the original machine and add to it a new depreciation for the \$990,000 upgrade investment.
 - Use MACRS GDS 5 year recovery the old machines and start a new 5 year depreciation for the upgrade investment.
- Invest \$9.5 million to establish manufacturing capability to build company's next generation unmanned craft

- Increase of revenue in 1st year is \$1,305,000. This amount goes up each year by 3.5% inflation rate.
- ⊖ Market Value of \$905,000 year 8
- Life 8 years
- Use MACRS GDS 5 year

From Finance Committee:

- Committee has found investors willing to invest \$10.6 million.
- Projects must meet after tax MARR 10%
- As an exchange rate, use 1 dollar = 1.01 euro
- State tax rate 7.6%
- Federal tax rate 21%
- Use MACRS GDS depreciation

You're given the following Strategic Direction from Executive Team made up of the CEO, CFO, Chief of Technology:

- Establishing manufacturing capability for next generation unmanned craft is the top priority. Companies that can deliver these as production aircraft will have competitive advantage 10-15 years from now.

IENG377 TEAM PROJECT:

Milestones for the project are listed below:

1. Submit team name, team members list.
2. Develop an Excel spreadsheet model to analyze the scenarios within the case.
 - Show After-Tax Cash Flow Analysis for each option (Find at least Present Worth).
 - Show one graph with breakeven analysis for all options.
3. Give a 10 minute PowerPoint presentation to explain the team's analysis and recommendations for the case. Cut and paste in Excel spreadsheets and graph. Each team member presents at least one Power Point slide. PowerPoint Presentation should include:
 - Title Page with Title and team member names
 - State problem and possible solutions
 - State Assumptions
 - Show analysis for each option (cut and paste excel spreadsheets)
 - Show graph of breakeven on investment
 - Make and justify recommendations

Grading (15 points)

1. Presentation (**5 points**) – each person must present at least 1 slide (not including the title page and problem description)
2. Analysis and recommendations (**10 points**) – make calculations using Excel and paste the table and graphs into PowerPoint