1. **Describe your idea for an IT investment project, referencing one of the strategic goals for your chosen company. The project must align with this strategic goal and include a software component or a SaaS solution.**
2. There's no secret that artificial intelligence will soon become a central point of international business operations. In fact, artificial intelligence is already here. With Apple currently sitting as one of the world's top technology companies, and now a media company with the releases of Apple TV and Apple Music respectively, it’s the best time for Apple to accomplish one of its strategic goals: to expand technology to enable growth in digital content delivery. There are many options for Apple to choose from including IBM Watson, Salesforce Einstein, and Azure Machine Learning, to name a few, that are great prospects to utilize as a suitable platform for the development of Apple’s first AI system. In this case, we’ll be exploring GitHub as a SaaS solution to the development of said AI while allowing our Developers to collaborate effectively and efficiently.
3. **Describe the current financial position of your chosen company. The description must align with the company’s 10-Q financial statements and include the following components, along with a justification for each of the ratios used:**

To begin, let's cover Apple Inc.’s current financial standing as of Q4 2020. First, the net profit must be computed by computing the difference between total revenue and total expenses. This leads to a net profit of $28,755 by subtracting $82,684 from $111,439. This led to a record setting 2021 Q one for Apple due to the double-digit growth in each product category. Next, Retained Earnings currently sits at 14,301. This is Apple's lowest retain earnings to date. While not the best news, this is merely the result of dividends being announced to shareholders.

Next, let's go over the liquidity ratios. These ratios are important because they measure Apple's ability to pay off short term debts. The higher the ratio, the more likely Apple can pay their short-term bills. The ratios are the following:

1. Quick Ratio: 154,106 – 4,973/132,507 = 1.12
2. Current Ratio: 154,106/132,507 = 1.16
3. Cash Ratio: 36,010 + 40,816/132,507 = 0.58
4. Overall Liquidity Ratio: 1.16

While this is a class of ratios, the main ratio to pay attention to is the Current Ratio. The general idea is anything greater than 1 means the company is healthy, so Apple is in good standing. A good general question is why is the quick ratio a little lower, but the current ratio is higher? This is because Apple doesn’t carry a lot of inventory on-hand, but this only serves as a testament to Apple’s supply chain efficiency since it’s still healthy.

While liquidity ratios are used to determine a business’ ability to pay short term debt, solvency ratios are calculated and used to determine their ability to pay off long term obligations. The ratios that fall into this category include the debt ratio. The calculation is the following:

1. Debt Ratio: 7,762/354,054 = 0.02
2. Debt-to-Equity: 7,762/66,224 = 0.12

The debt ratio is used to measure how much of the company’s money has been financed through a lender and how much is the company's own assets. The higher the debt ratio, the higher the amount of money the company owes to lenders. In this case, Apple's debt ratio as of 2020 Q4 is very low which is a good sign that Apple doesn’t have as much money to pay to back to lenders.

Lastly, profitability ratios are used to measure a company's ability to generate earnings relative to his revenue, operating costs, balance sheet assets, or shareholders equity overtime. This class of ratios include:

1. Return on total assets: 100 \* 28,755/354,054 = 8.12
2. Return on Equity: 100 \* 28,755/66,224 = 43.34
3. Profit Margin Ratio: 100 \* 28,755/111,439 = 25.80

C. **Compile the budgeted income statement using the attached “Financial Fact Sheet” for your company.**

|  |  |  |
| --- | --- | --- |
| *Assume all numbers are in millions* |  | *Estimated Next Quarter Profit/(Loss)* |
| Total Revenue from Sales | $16.2 |  |
| Total Units to be Produced | 13,000 |  |
| Cost of Goods Sold | ($6.955) |  |
| Gross Profit |  | $9.245 |
| *Assume all numbers are in millions* |  |  |
| **Total cost for all Overheard** | ($5.65) |  |
| *Selling and Administrative Budget are in millions* |  |  |
| **Total cost for all Selling and Administrative Budget** | ($4.275) |  |
| *Other Revenue and Expenses* |  |  |
| Interest Expense | ($850.00) |  |
| Interest Revenue | $921.00 |  |
|  |  |  |
| Income before Income Tax |  | ($679.929) |
| *Income Tax Rate* |  |  |
| Income Tax Rate Percentage |  | 21% |
| Total Income Tax |  | 0 |
| Estimated Income Net Profit/(Loss) |  | ($679.929) |

**D. Describe your IT procurement plan based on your company’s “Financial Fact Sheet,” budgeted income statement, and IT investment project idea. Include a description of the decisions you made regarding the following points:**

To start, this project has a cost of $12.56 million with the project life cycle of 5 years. Also, over the 5-year life cycle, there will be additional cash flows of $5.75M in year 1, $3.75M in year 2, $3.65M in year 3, $2.25M in year 4, and $1.5M in year 5. Apple will utilize GitHub Enterprise to provide our internal developers with access to the tools necessary during the development process. This will include support for popular IDEs, continuous integration tools and other third-party applications and services. This cost is necessary to maintain the confidentiality that Apple is known for during the development of their unique products and services.

Custom AI solutions may cost as much as $300,000 to develop and rollout compared to the average $40,000 per year for third party software. With that being said, it’s more cost effective for Apple to utilize GitHub Enterprise as well as being a less problematic option. This is because Apple can create a custom server for free, but naturally this comes with limitations to what our developers can accomplish. As stated earlier, GitHub will provide them with all of the tools necessary to accomplish this project effectively with no restrictions. This will come at the cost of $21 per month or $252 per year. A much smaller cost than the average $40k to use a third-party software. This will provide Security, Compliance, Flexible Deployment, and Advanced Collaboration.

**E. Explain how your IT investment project idea will be funded, including a detailed discussion of marginal cost of capital (MCC) that supports your project proposal, and based on the company’s “Financial Fact Sheet.” Include the following calculations in your explanation:**

There are a few ways to fund this project. These include implementation and calculations of WACC, ARR, and NPV. Each calculation will be completed and shown below:

1. Marginal Cost of Capital = Cost of debt \* (1 – tax rate)

= 6% \* (1 – 32%)

= 0.0408 or 4.08%

1. Weighted-Average Cost of Capital: (WACC) =

(35% \* 10%) + (35% (6% (1-32%))) + (30% \* 12.5%) = 8.678%

1. Average rate of return = (Assume numbers are in millions)

3.38/6.28 = 53.82%

1. Net present value = expected cash inflows – amount to be invested

|  |  |  |  |
| --- | --- | --- | --- |
| Year | Present Value of $1 at 8% | Net Cash Flow | Present Value of Net Cash Flow |
| 1 | 0.926 | $ 5,750,000 | $ 5,324,500 |
| 2 | 0.857 | $ 3,750,000 | $ 3,213,750 |
| 3 | 0.794 | $ 3,650,000 | $ 2,898,100 |
| 4 | 0.735 | $ 2,250,000 | $ 1,653,750 |
| 5 | 0.681 | $ 1,500,000 | $ 1,021,500 |
| Total |  |  | $ 14,111,600 |
| Amount to be Invested |  |  | $ (12,560,00) |
| Net Present Value |  |  | $ 1,551,600 |

The marginal cost of capital is defined as the cost to raise one additional dollar of new capital from a particular source. In other words, it is the rate of return that shareholders and lenders expect before making an investment in the company. Typically, the marginal cost of capital increases as the company raises more capital. In this case, our marginal cost of capital is 4.08%. This means we must provide at least this much of a return to our shareholders and lenders before they would be willing to invest more money into the company.

In terms of funding the project, Apple’s financial fact sheet states the company has fixed rates for cost of equity, cost of debt, and cost of preferred stock at 10%, 6%, and 12.5% respectively. With that being said, Apple’s WACC was determined to be 8.678% with the Equity, Debt, and Preferred Stocks weights selected to be 35%, 35%, and 30% respectively. This leads to the Net Present Value of the project being calculated at $1,551,600. This is a solid profit on top of covering the initial cost of investment for the AI SaaS project.

**F. Provide a brief summary of your findings and recommendations using the key points from parts A–E.**

Based on the calculations completed in this analysis, especially the net present value, Apple’s Artificial Intelligence SaaS project will be very successful. Apple will further enhance their position as one of the top tech companies in the world and fulfill its goal to expand technology to enable growth in digital content delivery. After analyzing the liquidity, solvency, and profitability ratios, Apple should be confident in this project, and move forward with the utilizations of GitHub Enterprise to allow internal Apple developers to begin scripting code to develop Apple’s first AI System. Lastly, Apple’s Rate of Return is extremely favorable at 53% over the 5-year life cycle of this project. In tandem with the NPV, the project will essentially pay for itself. This will make up for the quarterly loss that has been projected above while also taking weight off of Apple’s stakeholders. Let’s develop Apple’s first AI system and propel Apple ahead of all of its competitors.

**References:**

Ai pricing: How much does artificial intelligence cost? (n.d.). Retrieved April 19, 2021, from https://www.webfx.com/internet-marketing/ai-pricing.html

Apple debt-to-equity. (n.d.). Retrieved April 19, 2021, from https://www.gurufocus.com/term/deb2equity/NAS:AAPL/Debt-to-Equity/Apple

Apple revenue 2006-2020: AAPL. (n.d.). Retrieved April 19, 2021, from https://www.macrotrends.net/stocks/charts/AAPL/apple/revenue

Dybek, M. (2020, October 31). Apple Inc. (NASDAQ:AAPL): Analysis of profitability ratios. Retrieved April 19, 2021, from https://www.stock-analysis-on.net/NASDAQ/Company/Apple-Inc/Ratios/Profitability#ROE

Marginal cost of capital (definition, formula): Calculation and examples. (2021, February 23). Retrieved April 19, 2021, from https://www.wallstreetmojo.com/marginal-cost-of-capital/

Pricing · Plans for every developer. GitHub. (n.d.). https://github.com/pricing#compare-features.