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GMGT 4010 - ADMINISTRATIVE POLICY

TEAM NUMBER 1

Word Count: 833
Page Count: 3

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HAND-IN TEAM ASSIGNMENT
Winter 2023

External Assessment:

The aerospace industry's major business segments include commercial airplanes, global services, military defence, space, and security systems. The geographical coverage of the industry is worldwide. While being historically prominent in North America and Europe, the industry has seen increasing global demand, especially in Asia Pacific (see Exhibit 1).

Asia Pacific's growing demand presents an opportunity for industry manufacturers to achieve greater profits. To increase revenue, firms need to utilize their innovative skills to supply the region with narrow-body aircrafts. The success of this initiative can be measured by a firm's ability to fill orders. Key success factors include access to capital and effective supply chain management needed to meet the demand.

Airline bankruptcies are a threat that manufacturers are faced with during the Covid-19 pandemic. Seeking new customers as well as maintaining existing business relationships will help manufacturers weather the current environment. Beyond this, firms can employ cost cutting measures to offset any lost business. Any new customers and minimal/zero lost customers are key success indicators.

The uncertainty of post-Covid trends is a threat. There is no guarantee that pre-pandemic levels of travel will return. While industry prediction for returning demand in both short haul (2022) and long haul (2025) air travel exists, firms must remain vigilant. Key success factors include the firm's commitment to research and development and sustained profitability in the long term.

Internal Assessment:

Boeing is one of the top corporations within the aerospace industry, primarily involved in commercial airlines, global services, and military defence. Boeing's geographical coverage extends to over 150 countries in the world and is based in North America.

Being one of the earliest entrants to the market, Boeing is positioned high in the minds of consumers. Boeing's vast industry expertise stemming from over 100 years in the industry has afforded them strong partnerships with their partners and suppliers to achieve economies of scale. This enhances their ability to meet market demands in a timely manner, which will be key to their success if they are to increase profitability moving forward.

The Boeing brand is synonymous with the aerospace industry. However, despite their once dominant position in the market, recent tragedies have befallen the company. These human and financial disasters have shaken the public's faith in Boeing and greatly damaged the firm's reputation (see Exhibit 2). To combat this weakness, the company needs to utilize the urgency to address their internal shortcomings if they are to recapture trust and market share. Key among these would be a shift away from outsourcing and back to in house engineering.

Although the recent public tragedies have caused Boeing major losses, the company's sales are projected to be on the upswing (Exhibit 5). As such, Boeing has the financial capacity to finance projects and initiatives when necessary. This strengthens the firm's ability to pursue strategic endeavors and adapt to changing market conditions in the future

Financial Assessment

The Boeing Company will be inclined to invest in the four-billion-dollar reconstruction of the 737 MAX as the net present value of the project (see Exhibit 4) is positive. The financial ratios provide insight on how Boeing can go about financing the funds. To finance this project, 75% debt and 25% equity should be used as the firm has no retained earnings to finance from.

Creditors will likely extend a loan to The Boeing Company based on their ROI, current ratio, and interest-coverage ratio. From The Boeing Company's financial ratios (see Exhibit 3), their ROI indicates that the firms' investments will soon be able to generate a profit since the trend is going toward positive values. The company's current ratio is consistently above one, indicating a capacity to repay short-term obligations. Boeings interest-coverage ratio shows that they are steadily recovering from their recent losses.

The 25% equity will be raised because there are concerns about high interest rates on approved loans with 100% debt financing. From the financial assessment (Exhibit 3), the firm's quick ratio is relatively low, indicating illiquid collateral, which signals a difficulty to repay short-term obligations. As well, Boeing's current day sales in receivables ratio is incredibly high, suggesting Boeing is not managing their receivables well, which is troubling to creditors. The company also has a very high debt-to-equity ratio, so reducing leverage may be of particular interest. Lastly, demand for stocks may decrease if more than this amount of equity is issued as it could signal to shareholders that the stock is overvalued.

There are many consequences of the financing decision to consider. The first is the expected loss of revenue during the project's construction, which would further damage many of Boeing's financial ratios. As well, while the firm redesigns the 737 MAX instead of creating existing plane models, current loyal customers may switch airlines, losing customers to competition. Lastly, since disproportional raising of debt and equity is being used, there will be an increase to the weighted cost of capital to the firm, which can be seen in future projects net present value calculations (see Exhibit 4).

Exhibit 1: External Assessment

- Opportunity: The growing market in Asia Pacific. Large demand for narrow-body aircrafts.
- Opportunity: Airbus struggling to keep pace with demand.
- Threat: Emerging trends. No guarantee travel will rebound to pre-pandemic levels.
- Threat: Previous industry assumptions upended. Ex: Travel's correlation to GDP growth is no longer certain.
- Threat: Airlines (customers) going out of business as a result of the pandemic.

Exhibit 2: Internal Assessment

Resource/Capability	**Valuable**	**Rare**	**Inimitable**	**W/S/DC/SDC**	**Organizational Support**	**Competitive Implication**
Industry Expertise	Y	Y	Y	SDC	Y	Sustained Competitive Advantage
Boeing Brand*	N	-	-	W	-	Disadvantage
Access to Capital	Y	N	N	S	Y	Competitive Parity

*Under normal circumstances, we would have classified the brand as a Sustained Competitive Competency. However, given the circumstances of the case, we presently identify it as a Weakness to the firm.

Exhibit 3: Financial Ratios

Year	**2021**	**2020**	**2019**
PROFIT RATIOS			
1. Return on Investment	-440.0000%	-1175.2953%	-58.2418%
2. Return on Assets	-3.0963%	-7.8489%	-0.4760%
3. Return on Equity	28.8967%	66.0636%	7.6627%
4. Gross Margin	195.1048%	209.7012%	194.0856%
5. Operating Margin	-4.6592%	-21.9523%	-2.5797%
6. EBIT Margin	-3.7745%	-21.1837%	-2.0076%
7. EBITDA Margin	-1.2170%	-18.0904%	0.3866%
8. Pre-tax Profit Margin	-8.0805%	-24.8908%	-2.9507%
9. Net Profit Margin	-6.8876%	-20.5320%	-0.8307%
LIQUIDITY RATIOS			
1. Current Ratio	1.3253	1.3937	1.0505
2. Quick Ratio	0.3640	0.4575	0.2631
ACTIVITY RATIOS			
1. Asset Turnover Ratio	0.4495	0.3823	0.5729
2. Inventory Turnover Ratio	-0.7380	-0.8059	-1.0350
3. Receivable Turnover Ratio	1.1493	0.7489	0.9142
4. Days Sales in Receivables	317.5956	487.3824	399.2537
LEVERAGE RATIOS			
1. Debt to Assets Ratio	1.1072	1.1188	1.0621
2. Debt to Equity Ratio	-10.3326	-9.4169	-17.0994
3. Long-term Debt to Capital Ratio	1.3538	1.4125	1.7117
4. Interest-Coverage Ratio	1.0820	5.9216	2.7355
SHAREHOLDER-RETURN RATIOS			
1. Total Shareholder Returns	5.3596%	-668.1351%	1421.6865%
2. Price-Earnings Ratio	($29.02)	($9.40)	($312.78)
3. Market-to-Book Ratio	47.9311	36.6770	72.7960
4. Dividend Yield	0.0000%	-5.8973%	-13.2169%
5. Book Value Per Share	-$14.67	-$17.86	-$8.20
6. Operating Cash Flow Per Share	-$2.87	-$12.61	-$1.95
7. Free Cash Flow Per Share	$ (19.6)	$ (27.9)	$ (2.7)

Exhibit 4: Net Present Value (NPV) Assessment

Free Cash Flow Calculation (in Millions)							
	2021	2022	2023	2024	2025	2026	Terminal
Revenue (1)	$ 62,286.00	$ 90,314.70	$ 121,924.85	$ 158,502.30	$ 198,127.87	$ 245,678.56	$ 304,641.42
Expenses (2)							
Direct Expenses	$ (59,269.00)	$ (77,049.70)	$ (96,312.13)	$ (117,500.79)	$ (138,650.94)	$ (160,835.08)	$ (186,568.70)
(Loss)/income from operating investments, net	$ 210.00	$ 273.00	$ 341.25	$ 416.33	$ 491.26	$ 569.87	$ 661.04
General and administrative expense	$ (4,157.00)	$ (5,404.10)	$ (6,755.13)	$ (8,241.25)	$ (9,724.68)	$ (11,280.63)	$ (13,085.53)
Research and development expense, net	$ (2,249.00)	$ (2,923.70)	$ (3,654.63)	$ (4,458.64)	$ (5,261.20)	$ (6,102.99)	$ (7,079.47)
Gain on dispositions, net	$ 277.00	$ 360.10	$ 450.13	$ 549.15	$ 648.00	$ 751.68	$ 871.95
Operating Income	$ (2,902.00)	$ 5,570.30	$ 15,994.35	$ 29,267.09	$ 45,630.33	$ 68,781.41	$ 99,440.72
Deduct Taxes (3)	$ (464.32)	$ 891.25	$ 2,559.10	$ 4,682.73	$ 7,300.85	$ 11,005.03	$ 15,910.51
Operating Income Less Tax	$ (2,437.68)	$ 4,679.05	$ 13,435.25	$ 24,584.35	$ 38,329.47	$ 57,776.38	$ 83,530.20
Cash Inflows							
Operating Income Less Tax	$ (2,437.68)	$ 4,679.05	$ 13,435.25	$ 24,584.35	$ 38,329.47	$ 57,776.38	$ 83,530.20
Depreciation (4)	$ 2,144.00	$ 2,100.00	$ 2,100.00	$ 2,100.00	$ 2,100.00	$ 2,100.00	$ 2,100.00
Total	$ (293.68)	$ 6,779.05	$ 15,535.25	$ 26,684.35	$ 40,429.47	$ 59,876.38	$ 85,630.20
Cash Outflows							
Increase in Working Capital (5)	$ 19,918.00	$ 25,000.00	$ 30,000.00	$ 35,000.00	$ 35,000.00	$ 35,000.00	$ 35,000.00
Capital Expenditures (6)	$ 10,000.00	$ 10,000.00	$ 15,000.00	$ 20,000.00	$ 25,000.00	$ 25,000.00	$ 25,000.00
Total	$ 29,918.00	$ 35,000.00	$ 45,000.00	$ 55,000.00	$ 60,000.00	$ 60,000.00	$ 60,000.00
Free Cash Flow	$ (30,211.68)	$ (28,220.95)	$ (29,464.75)	$ (28,315.65)	$ (19,570.53)	$ (123.62)	$ 25,630.20
Discount Factor (7)		1.1^1 = 1.1	1.09^2 = 1.19	1.09^3 = 1.3	1.08^4 = 1.36	1.08^ = 1.47	1.08^6 = 1.5869
Present Value of Cash Flows	$ (30,211.68)	$ (25,655.41)	$ (24,760.29)	$ (21,781.27)	$ (14,390.09)	$ (84.09)	$ 269,185.23
Total Present Value of Cash Flows	$ (116,882.83)						
Plus Terminal Value	$ 269,185.23						
Less Assumed Debt (8)	$ 61,000.00						
Total Net Present Value	$ 91,302.40						

Exhibit 5: Assumptions and Justifications

1) Assumes that revenue growth will be 45%, 35%, 30%, 25%, and then 24% respectively. Growth in year 1 is high is because there is an expected significant revival from the firm's current position, but then the rate will gradually decrease to 2018 levels of 24%.
2) All expenses are expected to grow at a rate of 30% in year 1, then 25%, 22%, 18%, and 16% respectively due to project costs. The decline in this rate is attributed to economies of scale, with a plateau of 16%, which was the pre-accident, pre-pandemic rate.
3) The tax rate is assumed to be 16% because this reflects historical tax rates for the firm.
4) Depreciation remains constant at 2100. The reason for this figure is because the average of the previous year's depreciation was approximately 2100, which we believe should carry forward.

5&6) The assumed increase in working capital and capital expenditure is provided by the figures shown. The rationale for this increase is that there will be a significant increase to inventories in the future due to the capital expenditure increase, leading to a continually growing working capital.

7) WACC is assumed to be 10%, 9%, 9%, 8%, 8% in the years respectively, then 8% in perpetuity with 2% continual growth rate. This assumption is based on the original change of capital structure that will come from the significant debt financing. Once the debt is being repaid, the WACC will decrease to historical WACC levels (International Air Transportation Association, 2019)
8) The assumed debt from this project will be the original four billion, plus long-term debt of fifty-seven billion. This is information given in the case.

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