

**Problem 1. Business Strategy Analysis**

- (i) LinkedIn competes for advertising revenue with other social networks including Facebook and Twitter. List one key success factor and key risk of LinkedIn's 'Marketing Solutions' business relative to these competing social networks. **[4 points]**

1. Key success factor

- **the most effective platform for marketers to engage with professionals**
- **targeting capabilities allow marketers to reach LinkedIn members according to key attributes such as industry, function, seniority, and company size**

2. Significant risk

- **Less frequent user usage due to user focus on professional activities and job search**
- **Less effective for advertising products and services that are unrelated to professional activities**

- (ii) 'Sales Navigator' is LinkedIn's premium social selling solution and one of LinkedIn's most promising monetization strategies. List one significant risk associated with this monetization strategy. **[3 points]**

- **Increase in amount of user 'spamming' will deter usage of LinkedIn**
- **Competition from existing CRM providers including Salesforce and Microsoft Dynamics**

**Problem 2. Accounting Analysis**

- (i) Summarize the accounting policy used by LinkedIn during the most recent fiscal year for the expensing of sales commissions that are directly associated with non-cancelable subscription contracts. **[3 points]**

- **deferred and amortized over the non-cancelable terms of the related customer contracts, which are generally 12 months**

- (ii) Assume that instead of using its current accounting policies for deferring the recognition of both revenues and directly associated sales commissions, LinkedIn instead recognized these revenues and costs at the inception of the sale. Estimate the Income from operations that LinkedIn would have reported for the most recent fiscal year. **[6 points]**

**restated income from operations**

**= reported income from operations + increase in deferred revenue – increase in deferred commissions**

**= 47,812 (from IS) + 134,500 (from SoCF) – 18,249 (from SoCF) = 164,063**

(iii) Summarize the accounting policy that LinkedIn uses for 'website and internal-use software development costs'. [3 points]

- **The Company capitalizes certain costs to develop its website and internal-use software when preliminary development efforts are successfully completed, management has authorized and committed project funding, and it is probable that the project will be completed and the software will be used as intended. Such costs are amortized on a straight-line basis over the estimated useful life of the related asset, which approximates two to three years. Costs incurred prior to meeting these criteria, together with costs incurred for training and maintenance, are expensed as incurred.**

(iv) Assume that instead of using its current accounting policy for 'website and internal-use software development costs', LinkedIn instead expensed all these costs in the fiscal year in which they were incurred. Estimate the Income from operations that LinkedIn would have reported for the most recent fiscal year. [6 points]

**restated income from operations**

**= reported income from operations - capitalized development costs + amortized development costs**

**= 47,812 (from IS) - 39,300 (from Note 1) + 15,600 (from Note 1) = 24,112**

**Problem 3. Financial Analysis**

- (i) Compute the net operating asset (NOA) turnover ratios for LinkedIn and Facebook for the most recent fiscal year. **[6 points]**

2103 NOA Turnover for LinkedIn =

**Recall that NOA = Common Equity + Debt + Preferred Stock + Minority Interest**

$$\text{NOA Turnover} = \text{Sales} / (\text{Average NOA}) = 1,528,545 / (\frac{1}{2}(2,629,394 + 5,000 + 908,424)) = 0.86$$

2013 NOA Turnover for Facebook =

$$= \text{Sales} / (\text{Average NOA}) = 7,872 / (\frac{1}{2}(15,470 + 237 + 239 + 11,755 + 1,500 + 491 + 365)) = 0.52$$

- (ii) Briefly identify the primary reason(s) for the difference between the NOA turnover ratios that you computed above? **[4 points]**

**Primary reasons (in decreasing order of importance):**

- 1. Facebook's balance of marketable securities is a higher percentage of sales, which slows its turns**
- 2. LinkedIn has a relatively large balance of deferred revenues, which increases its turns**
- 3. Facebook has a relatively large balance of PP&E, which lowers its turns**
- 4. Facebook has a relatively large balance of Goodwill and Intangibles, which lowers its turns**

- (iii) Estimate the average number of days that elapsed between the receipt of cash from customers and the recognition of the associated revenue for LinkedIn and Facebook in the most recent fiscal year. Be sure to specify whether cash is received before or after revenue is recognized in each case. [6 points]

Average number of days for LinkedIn =

**Average days receivables =  $365 * (\frac{1}{2}(302,168 + 203,607)) / 1,528,545 = 60.4$  days**

**Average days deferred revenues =  $365 * (\frac{1}{2}(392,243 + 257,743)) / 1,528,545 = 77.6$  days**

**On average, LNKD collects cash  $77.6 - 60.4 = 17.2$  days before it recognizes revenue**

Average number of days for Facebook =

**Average days receivables =  $365 * (\frac{1}{2}(1,109 + 719)) / 7,872 = 42.3$  days**

**Average days deferred revenues =  $365 * (\frac{1}{2}(38 + 30)) / 7,872 = 1.6$  days**

**On average, FB recognizes revenue  $42.3 - 1.6 = 40.7$  days before it collects cash**

- (iv) Briefly identify the primary reason(s) for the difference between the average number of days for LinkedIn and Facebook that you computed above. [4 points]

**Primary reason is that LNKD generates most of its revenue from sales of subscriptions for which it receives payments from customers in advance, while FB generates most of its revenues from advertising, from which it receives payments from customers in arrears**

**Problem 4. Forecasting**

- (i) The Cowen and Company research report provided in the financial statement booklet forecasts that LinkedIn's operating margin will grow from 3.1% in the most recent fiscal year to 25.5% in 2019 (see Figure 20 of the report). Identify the key drivers of the improved operating margin. [5 points]

**Based on forecasts for individual income statement line items in Fig. 20, in decreasing order of importance:**

- 1. Product development decreases (as % of sales) from 25.9% to 18.0%, adding 7.9%**
- 2. Sales & Marketing decreases from 34.2% to 29.5%, adding 4.7%**
- 3. General & Administrative decreases from 14.8% to 10.2%, adding 4.6%**
- 4. Cost of revenue decreases from 13.3% to 10.5%, adding 2.8%**
- 5. Depreciation and amortization decreases from 8.8% to 6.3%, adding 2.5%**

- (ii) The Cowen and Company research report provided in the financial statement booklet forecasts that LinkedIn's Accounts Receivable balance will grow from 302.2 in the most recent fiscal year to 1,143.0 in 2019 (see Figure 21 of the report). Briefly evaluate the plausibility of this forecasting assumption. [5 points]

**This is an increase of  $(1,143/302.2)-1=278\%$ . Over the same period, total revenue is forecast to grow from 1,528.5 to 8,301.3 for an increase of 443%. On this basis, the forecast looks unreasonable, as it assumes a large increase in receivables turnover.**

**HOWEVER, note that receivables are primarily associated with the 'Marketing Solutions' business, where revenues are forecast to grow from 311.7 to 1,121.6 for an increase of 260%. Thus, this forecasting assumption looks reasonable because receivables grow approximately in line with the revenue stream with which they are associated.**

**Problem 5. Valuation Analysis**

In this problem, we will value LinkedIn using the residual income valuation model and the financial forecasts in the Cowen and Company report. We will begin by computing the residual income valuation at the end of 2018 and we will then discount that value back to 2014 and divide by the number of shares outstanding in 2014 to arrive at the value-per-share. Use a discount rate (cost of equity) of 10%.

- (i) Compute LinkedIn's residual income for 2019. [4 points]

$$\begin{aligned} \text{2019 residual income} &= \text{2019 Net income} - 10\% \text{ of 2018 Book value of equity} \\ &= 1,339.8 - 0.1 * 4,294.4 = 910.36 \end{aligned}$$

- (ii) Assume that LinkedIn's residual income has a perpetual growth rate of 4% beyond 2019. Compute the value of this growing perpetuity at the end of 2019. [4 points]

$$= ((1+g) * \text{2019 residual income}) / (r-g) = (1.04 * 910.36) / (0.10 - 0.04) = 15,780$$

- (iii) Use the residual income valuation model to value LinkedIn at the end of 2018 by combining your answers from parts (i) and (ii) above with LinkedIn's book value of equity at the end of 2018. [4 points]

$$\begin{aligned} &= (\text{2018 book value of equity}) + (\text{2019 residual income} / (1+r)) + (\text{2019 terminal value} / (1+r)) \\ &= 4,294.4 + 910.36 / 1.1 + 15,780 / 1.1 = 19,467 \end{aligned}$$

- (iv) Compute the per-share value of LinkedIn at the end of 2014 by discounting your answer to part (iii) back to 2014 and dividing by the 2014 'Wtd Avg. Diluted Shares Outstanding' provided in Figure 20 of the report. **[4 points]**

$$= (2018 \text{ Valuation} / (1+r)^4) / (\text{Wtd Avg. Diluted Shares Outstanding})$$
$$= (19,467 / 1.1^4) / 125.7 = \$105.78$$

- (v) Compare the per-share value you derived in part (iv) above to the \$252.75 per-share value derived in Figure 10 of the Cowen and Company report. What are the main reason(s) for the different valuations? **[4 points]**

**Primary reasons (in decreasing order of importance):**

- 1. Cowen valuation excludes the economic value of stock that is forecast to be given to employees as compensation**
- 2. Cowen valuation computes terminal value by extrapolating a cash flow forecast that incorporates over 300M in cash from working capital that is not sustainable once growth slows**
- 3. Cowen valuation assumes all free cash flow is paid out as soon as it is generated, while the cash is in fact forecast to be stored on the balance sheet and generate a low interest rate.**

**This is the end of the exam.**