TechX: A case of simplified financial statements and cash flows analysis

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Abstract

This short case study explores a dilemma faced by many startup companies trying to grow their business: *how to effectively manage and analyze company finances and financial statements*. Students will be asked to act advisors to the management team of TechX by reviewing the current financial conditions of the startup and make recommendations on how to better manage their finances, specifically their cash flow, in order to become more attractive to potential investors. The ultimate goal is to provide students with an opportunity to better identify the nuances of financial management in a context they may find themselves in as they start their own enterprises.

Keywords: Startup, Financial Management, Cashflow, Investment, Valuation

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Introduction:

In this case study, we will analyze the Financial Statements of TechX, a new tech product startup company. TechX is looking for an equity investment of at least $500,000 to scale the business. The company is operating in a positive market environment, with some initial sales, and a young management team. We will explore the current financial condition of the company and provide recommendations on how to better manage its cash flow.

Company Background:

TechX was founded by a group of recent college graduates with degrees in computer science and engineering. They have developed a new software application to improve customer engagement by providing personalized recommendations based on user behavior to address a growing need in the marketplace. The team has conducted market research and identified a large market opportunity in the e-commerce sector, where customer engagement is critical to success. The management team is young and enthusiastic, with little prior experience in running a business. However, they have a strong technical background and have been working on the product for the past year. They have already made some initial sales to early adopters and are now looking to scale the business with a larger investment.

Industry Analysis and Market Conditions:

The e-commerce industry is growing rapidly, and customer engagement is becoming increasingly important. With the rise of social media, consumers expect a personalized experience when shopping online. The market for personalized recommendation software is estimated to reach $10 billion by 20X5. This presents a significant opportunity for TechX, and they are well-positioned to take advantage of this trend. The current market conditions are favorable for TechX, and they have a unique product that addresses a critical need in the market. The owners are expecting 3% quarterly sales growth for the remainder of 2024, followed by 15% growth in 20X5 and 20X6.

Equity Investment:

TechX is seeking an equity investment of at least $500,000 to scale the business over the next three years. They are looking for investors who share their vision and can provide strategic guidance and support. The investment will be allocated as follows: TechX intends to hire a salesperson to meet with customers, build relationships, and demo the product. This person will be paid a base salary of $45,000 plus a 5% commission on all newly generated sales. In addition, the owners intend to launch a marketing campaign costing $25,000 per quarter to build TechX’s brand. Finally, an additional $50,000 is needed for research and development costs to troubleshoot problems identified with the initial sales of the TechX.

Financial Analysis and Condition:

The owners have been focusing on product development and have not paid much attention to managing their finances. As a result, they are struggling to pay their bills on time and have a negative cash balance. To better understand TechX's financial condition, TechX has prepared the following financial statements to outline the performance during the first quarter of operations (As Indicated in Tables 1-4 in Appendix A).

Appendix A

Table 1:

TechX Income Statement For the Quarter ended 3/31/20X4		
Revenue		50,000
Cost of Goods Sold		10,000
Gross Profit		40,000
Operating Expenses		
Research & Development	23,000	
Rent	6,000	
Insurance	4,000	
Depreciation	750	
Total Operating Expenses		33,750
Net Income or Loss		6,250

Table 2:

TechX
Statement of Retained Earnings
For the Quarter ended 3/31/20X4

	Common Stock	Retained Earnings	Total
Beginning Balance	-	-	-
Shareholder Investment	10,000		10,000
Net Income or Loss		6,250	6,250
End of Year Balance	10,000	6,250	16,250

Table 3:

TechX
Balance Sheet
As of 3/31/20X4

Assets	
Cash	(1,000)
Accounts Receivable	21,000
Property, Plant, & Equipment (Net)	12,000
Less: Accumulated Depreciation	(750)
Total Assets	31,250
Liabilities	
Accounts Payable	15,000
Total Liabilities	15,000
Stockholder's Equity	
Common Stock	10,000
Retained Earnings	6,250
Total Stockholder's Equity	16,250
Total Liabilities and Stockholder's Equi	31,250

Table 4:

TechX
Statement of Cash Flows
For the Quarter Ended 3/31/20X4

Cash Flows from Operating Activities	
Net Income or Loss	6,250
Adjustments to Reconcile Net Income	
to Cash Flows From Operating Activities:	
Depreciation	750
Increase in Accounts Receivable	(21,000)
Increase in Accounts Payable	15,000
Net Cash Flows from Operating Activities	1,000
Cash Flows from Investing Activities	
Purchase of Property, Plant, and Equipment	(12,000)
Net Cash Flows from Investing Activities	(12,000)
Cash Flows from Financing Activities	
Proceeds from Equity Investment	10,000
Net Cash Flows from Financing Activities	10,000
Net Increase (Decrease) in Cash	(1,000)

Requirements 1: Review the first quarter financial statements and answer the following questions:

a) Does TechX appear profitable in the first quarter of operations? Describe how you can determine if a company is profitable.
b) As indicated in the Financial Analysis and Conditions section, TechX is struggling to pay their bills on time and has a negative cash balance. Describe the indicators on the financial statements that support this statement.
c) Review the Statement of Cash Flows and clearly articulate the sources and uses of cash.
d) What appears to be the primary driver of TechX's negative cash flow position?
e) Provide management with 3 recommendations to improve their cash flow position.

Requirement 2: Prepare Prospective Income Statement for the next 2 years using the data in this case.

TechX: A Case of Simplified Financial Statements and Cash Flows Analysis
Teaching Notes

Synopsis and Teaching Overview

The case study of TechX delves into the financial challenges faced by startups, particularly focusing on cash flow management and financial statement analysis. It follows the journey of a tech product startup founded by recent college graduates aiming to revolutionize customer engagement in the e-commerce sector. As TechX seeks to scale its operations through equity investment, students are tasked with evaluating its financial statements, identifying key issues, and providing recommendations to improve cash flow management and attract potential investors.

The TechX case can be used in an undergraduate entrepreneurship course to facilitate interactive discussions and critical thinking among students. The instructor can start by introducing the background of TechX and the context of the e-commerce industry, highlighting the significance of financial management for startups. Then, students can analyze the provided financial statements, discussing indicators of profitability, cash flow issues, and investment requirements. Through group discussions, role-plays, and presentations, students can brainstorm strategies to address TechX's financial challenges and develop actionable recommendations. Additionally, the instructor can incorporate real-world examples and guest speakers from the startup ecosystem to provide practical insights.

Learning Objectives

After completing the case study requirements, students should be able to:

1. Examine the importance of financial management in startup ventures and the key components of financial statements, including income statements, balance sheets, and cash flow statements.

2. Interpret financial data, identify financial challenges faced by startups, and analyze the impact of cash flow on business operations and investor attractiveness.

3. Apply financial analysis techniques to evaluate TechX's financial condition, including profitability assessment, cash flow analysis, and investment allocation.

4. Critically assess TechX's financial statements, identify factors contributing to its negative cash flow position, and evaluate the effectiveness of proposed investment strategies.

5. Synthesize their findings to develop actionable recommendations for TechX's management team to improve cash flow management, attract potential investors, and support business growth.

6. Evaluate the feasibility and potential risks of recommended financial strategies, considering their impact on TechX's short-term and long-term financial sustainability.

Teaching Plan

Case Introduction

For this case study, students are tasked with evaluating the financial statements of TechX, a tech startup focused on e-commerce customer engagement. The case is designed to facilitate a detailed analysis of financial management, focusing on cash flow challenges and the startup's financial sustainability.

Content Relative to Learning Objectives

Requirements 1: Review the first quarter financial statements and answer the following questions:

f) Does TechX appear profitable in the first quarter of operations? Describe how you can determine if a company is profitable.
Possible Answer
Yes, TechX does appear profitable from the first quarter. Their Income Statement provides details of revenues and expenses. This is what is used to determine profitability. Since the revenues are greater than the expenses, the company appears to be profitable (Easton et al., 2015; Palepu et al., 2020; Stobierki, 2020).

g) As indicated in the Financial Analysis and Conditions section, TechX is struggling to pay its bills on time and has a negative cash balance. Describe the indicators on the financial statements that support this statement.
Possible Answer
The negative cash balance shown on the balance sheet is one indicator the company is struggling with cash management. A couple of ratios that could be used to determine the liquidity of TechX are the Cash Ratio and the Quick Ratio (Kenton, 2023).
The **Cash Ratio** is simply the total cash divided by the total current liabilities. In this case, we would have a negative cash ratio (-1,000/15,000 = -0.667). A ratio over 1 would indicate the company has enough cash to cover all current liabilities. Since TechX has no cash, it could not cover current liabilities with cash alone. This would be concerning to future investors of TechX.
The **Quick Ratio** (also called the acid test) builds on the cash ratio by determining if TechX could pay the current liabilities using cash **and** accounts receivable. The formula for this ratio is (Cash + Accounts Receivable) / Current Liabilities. For TechX this ratio would be (-1,000 + 21,000) / 15,000 = 1.33. Depending on the anticipated collection of these receivables this could give investors a little more confidence in TechX. For example, if the receivables are expected to be collected before the payables are due, then TechX could pay the outstanding obligations without suffering any negative consequences for late or non-payment.
Another common liquidity test is the **Current Ratio**. The current ratio builds on the Quick Ratio by including inventory in the numerator. Since TechX does not have inventory, this would not be a logical test for TechX.

h) Review the Statement of Cash Flows and clearly articulate the sources and uses of cash.

Possible Answer

The Statement of Cash Flows outlines how TechX generated and used cash during the quarter, to go from a starting balance of $0 to an ending balance of -$1,000. Specifically, the uses and sources of cash are broken up into three categories: operating, financing, and investing.

The operating section shows how much cash was generated or used in the day-to-day operations of the business. It can be prepared using either the indirect or direct method. The indirect method was used here for TechX to show the company generated $1,000 in operating cash flows. We use net income as a starting point and then adjust for various items. The first of these adjustments is depreciation. Since depreciation is an expense that reduces net income, but does not represent an outflow of cash, we want to add this to our net income. Next, we have to adjust for increases or decreases in current assets and current liabilities. In the example of TechX, this includes Accounts Receivable and Accounts Payable. An increase in accounts receivable indicates that we have recorded sales but have not yet collected the cash. Therefore, this would have a negative impact on cash. Conversely, an increase in accounts payable would indicate we recorded expenses that we have not yet paid for. This would have a positive impact on cash flows (Stobierski, 2020).

The second section details investing activities. This would typically include things like purchasing property, plant, and equipment, investments in securities, and the sale of securities or assets. TechX purchased PPE for a cash outflow of -$12,000.

The final section is the financing activities. This would typically include things like changes to long-term liabilities (taking out or payment of a loan) and equity accounts (issuing stock or paying dividends). TechX issued stock for a cash inflow of $10,000 (personal investment from owners savings).

When we add all three sections together, we see how cash changed during the quarter. We know from the balance sheet, cash went from $0 to -$1,000. This is confirmed when we add the three sections together ($1,000 - $12,000 + $10,000 = -$1,000).

i) What appears to be the primary driver of TechX's negative cash flow position?

Possible Answer

The primary driver of TechX's negative cash flow position appears to be the large percentage of sales that have not yet been collected. The AR Sales Ratio divides the net accounts receivable by net sales. A lower ratio means a lower percentage of sales on credit and lower liquidity risk. Here we see a rather high AR Sales ratio (21,000 / 50,000 = 42%). This tells us that even though TechX has started making sales, they have not yet started collecting on these sales (QuickBooks, 2020).

j) Provide management with 3 recommendations to improve their cash flow position.

Possible Answer

a. <u>Factor Receivables</u> – Sell off receivables to a third party for collection. TechX could get a lesser amount upfront (60% - or $12,600, for example) from the third party. This would help TechX's liquidity issues in the short run, but would not completely alleviate the cash flow crunch TechX is experiencing. This would improve the cash ratio to 0.77 ((-1,000 + 12,600) / 15,000). However, since A/R would now be zero, the Quick Ratio would decline, and would also be 0.77 (Foundercrate, 2021).

b. Offer credit terms that reward prompt payment – Offering terms such as 2/10 n 30 entices customers to pay their outstanding balances quickly. By quickly converting accounts receivable to cash, the company can improve its liquidity.
Renegotiate payment terms on A/P – The liquidity ratios we have discussed are based on two things – current assets and current liabilities. The prior two methods explored improving the current asset side of the equation. This option explores the current liability side. TechX may wish to reach out to its vendors to negotiate extended credit terms, allowing more time to pay the outstanding liabilities (so it has more time to collect the receivables). Typically, this would involve paying interest on outstanding balances. This will not necessarily improve the liquidity ratios we have discussed, but it would ease the tension brought on by the negative cash flow position. Add specific examples of what this actually is.

Requirement 2: Prepare Prospective Financial Statements for the next 2 years using the data in this case.

Prospective Income State:

TechX
Prospective Income Statement
For the Years Ended 12/31/20X4 - 20X6

	Q1 20X4 - Actual	Q2 20X4 - Projected	Q3 20X4 - Projected	Q4 20X4 - Projected	2024 - Projected	2025 - Projected	2026 - Projected
Revenue	50,000	51,500	53,045	54,636	209,181	240,558	276,642
Cost of Goods Sold	10,000	10,300	10,609	10,927	41,836	48,111	55,328
Gross Profit	40,000	41,200	42,436	43,709	167,345	192,447	221,314
Operating Expenses							
Research & Development	23,000	20,000	20,000	20,000	83,000	-	-
Wages	-	11,250	11,250	11,250	33,750	45,000	45,000
Commissions	-	2,575	2,652	2,732	7,959	12,028	13,832
Payroll Taxes	-	1,058	1,064	1,070	3,192	4,363	4,501
Advertising	-	25,000	25,000	25,000	75,000	100,000	100,000
Rent	6,000	6,000	6,000	6,000	24,000	24,000	24,000
Insurance	4,000	4,000	4,000	4,000	16,000	16,000	16,000
Depreciation	750	750	750	750	3,000	3,000	3,000
Total Operating Expenses	33,750	70,633	70,716	70,802	245,901	204,391	206,333
Net Income or Loss	6,250	(29,433)	(28,280)	(27,093)	(78,556)	(11,944)	14,981

A/R		159,181			240,558	276,642
	Revenues		159,181			

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