

Solutions Manual for Entrepreneurial Finance 5th Edition by J.Chris Leach and Ronald W.Melicher

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Chapter 2

DEVELOPING THE BUSINESS IDEA

FOCUS

In this chapter we examine how one can move from an idea to a determination of the feasibility of the related business opportunity. We present an opportunity screening system to aid in determining whether an idea should be discarded or pursued. We conclude the chapter with an overview of a business plan.

LEARNING OBJECTIVES

1. Describe the process of moving from an idea to a business model/plan.
2. Understand the components of a sound business model.
3. Identify some of the best practices for high growth, high performance firms.
4. Understand the importance of timing in venture success.
5. Describe the use of a Strength-Weakness-Opportunity-Threats (SWOT) analysis as an initial “litmus test.”
6. Identify the types of questions that a reasonable feasibility assessment addresses.
7. Identify quantitative criteria that assist in assessing a new venture’s feasibility and its ability to attract external financing.
8. Describe the primary components of a typical business plan.

CHAPTER OUTLINE

2.1 PROCESS FOR IDENTIFYING BUSINESS OPPORTUNITIES

2.2 TO BE SUCCESSFUL YOU MUST HAVE A SOUND BUSINESS MODEL

- A. Component 1: The Plan must Generate Revenues
- B. Component 2: The Plan must Make Profits
- C. Component 3: The Plan must Produce Free Cash Flows

2.3 LEARN FROM THE BEST PRACTICES OF SUCCESSFUL ENTREPRENEURIAL VENTURES

- A. Best Marketing Practices
- B. Best Financial Practices
- C. Best Management Practices
- D. Best Production or Operations Practices are also Important

2.4 TIME-TO-MARKET AND OTHER TIMING IMPLICATIONS

2.5 INITIAL “LITMUS TEST” FOR EVALUATING THE BUSINESS FEASIBILITY OF AN IDEA

2.6 SCREENING VENTURE OPPORTUNITIES

- A. An Interview with the Founder (Entrepreneur) and Management Team: Qualitative Screening
- B. Scoring a Prospective New Venture: Quantitative Screening
- C. Industry/Market Considerations
- D. Pricing/Profitability Considerations

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- E. Financial/Harvest Considerations
- F. Management Team Considerations
- G. Opportunity-Screening Caveats

2.7 KEY ELEMENTS OF A BUSINESS PLAN

- A. Cover Page, Confidentiality Statement, and Table of Contents
- B. Executive Summary
- C. Business Description
- D. Marketing Plan and Strategy
- E. Operations and Support
- F. Management Team
- G. Financial Plans and Projections
- H. Risks and Opportunities
- I. Business Plan Appendix

SUMMARY

APPENDIX A:

Applying the VOS Indicator™: An Example
CSC Profile
Market Opportunity
Products
Management Team
CSC Assessment

DISCUSSION QUESTIONS AND ANSWERS

1. *How do we know whether an idea has the potential to become a viable business opportunity?*

The answer is that we don't know with absolute certainty. While there is no infallible screening process, there are tools and techniques that can help examine similarities between a new idea and previously successful ventures.

2. *Identify three types of startup firms.*

Salary-replacement firms are firms that provide their owners with income levels comparable to what they could have earned working for much larger firms.

Lifestyle firms are firms that allow owners to pursue specific lifestyles while being paid for doing what they like to do.

Entrepreneurial ventures are entrepreneurial firms that are flows and performance oriented as reflected in rapid value creation over time.

3. *Briefly describe the process involved in moving from an idea to a business plan.*

Refer to Figure 2.1 “From Entrepreneurial Opportunities to New Businesses, Products, or Services.” Start with “ideas,” then assess the “feasibility” (finding an unfilled need), and then develop a “business plan.”

4. *What are the components of a sound business model?*

The components of a sound business model are the abilities to generate revenues, create a profit, and produce free cash flow. These components must be achieved within a reasonable time frame as the venture progresses through the early stages of its life cycle.

5. *Describe the differences between entrepreneurial ventures and other entrepreneurial firms.*

Entrepreneurial ventures are entrepreneurial firms that are flows and performance oriented as reflected in rapid value creation over time. Such ventures strive for high growth in revenues, profits, and cash flows. In contrast, some small businesses may have some of the trauma and rewards of the entrepreneurial lifestyle, but remain centered on a small-scale format with limited growth and employment opportunities.

6. *Identify some of the best marketing and management practices of high growth, high performance firms.*

Successful high-growth, high-performance firms typically sell high quality products or provide high quality services. Such firms also generally develop and introduce new products or services considered the top or best in their industries; they are product and service innovation leaders. Their products typically command higher prices and profit margins. In summary, these firms’ “marketing profiles” are characterized by high quality, innovative leadership, and pricing power.

Best management practices include: (1) assemble a management team that is balanced in both functional area coverage and industry/market knowledge, (2) employ a decision-making style that is viewed as being collaborative, (3) identify and develop functional area managers that support entrepreneurial endeavors, and (4) assemble a board of directors that is balanced in terms of internal and external members.

7. *Describe and discuss some of the best financial practices of high growth, high performance firms. Why is it also important to consider production or operations practices?*

High-growth, high-performance firms consider their financial practices as important as their marketing and operating functions. To this end, they plan for future growth and unexpected contingencies that may develop as the firm operates. They prepare realistic monthly financial plans for at least the coming year, and also may prepare annual financial plans for the next three to five years. As rapid growth typically requires multiple rounds of financing, successful ventures anticipate financing needs in advance and seek to obtain financing commitments before the funds are actually needed. Financing sources that allow, whenever possible, the entrepreneur to maintain control over the firm, are highly desirable. Successful high growth firms devote the necessary resources and effort to manage the firm's assets, financial resources, and operating performance efficiently and effectively. They also develop preliminary harvest or exit strategies and may indicate potential liquidity events in their business plans.

It is the production or operations area that carries the responsibility of delivering high-quality products or services on time. Customers want their products or services delivered when they are promised. Thus, the production or operations area is equally important to successful high-growth, high-performance firms.

8. *Time to market is generally important, but being first to market does not necessarily ensure success. Explain.*

“Time-to-market” is particularly critical when ideas involve information technology, as a few months might determine success or failure. EBay’s rapid progression from concept to market dominance provides an example of the advantages of acting quickly in a technology market. “First to market,” does not always result in success, as quite often companies entering the market later may achieve significant competitive advantages such as more efficient production, distribution, and service, superior product design, and a more sound financial position. The portable computer, first sold by Osborne, provides an example of a technology product that failed to achieve success by being “first to market.”

9. *What is meant by a viable venture opportunity?*

A viable venture opportunity is one that creates or meets a customer need, provides an initial competitive advantage, is timely in terms of time-to-market, and offers the expectation of added value to investors.

10. *Describe how a SWOT analysis can be used to conduct a first-pass assessment of whether an idea is likely to become a viable business opportunity.*

A SWOT analysis is an examination of strengths, weaknesses, opportunities, and threats to determine the business opportunity viability of an idea. One typically “begins” by asking whether there is an unfilled customer need. Other considerations that could be potential strengths or weaknesses include: intellectual property rights, first mover, lower costs and/or higher quality, experience/expertise, and reputation value. Areas to consider as potential opportunities or threats include: existing competition, market size/market share potential, substitute products or services, possibility of new technologies, recent or potential regulatory changes, and international market possibilities.

11. *Describe the meaning of venture opportunity screening.*

Venture opportunity screening is the assessment of an idea's commercial potential to produce revenue growth, financial performance, and value.

12. *An analogy used relating to venture opportunity screening makes reference to "caterpillars" and "butterflies." Briefly describe the use of this analogy.*

Caterpillars are ideas that are likely to become butterflies which are successful business or venture opportunities.

13. *When conducting a qualitative screening of a venture opportunity, whom should you interview? What topics should you cover?*

It is most important to interview the entrepreneur or founder. You might also want to interview the marketing manager, the operations manager, and the financial manager. In the event that a management team is not in place at the time of the qualitative screening, the entrepreneur or founder may have to play all of the roles.

The interviewing process with the entrepreneur should include questions aimed at understanding the big picture. Information should be sought regarding the intended customers, possible competition, intellectual property, challenges to be faced, etc.

The marketing manager interview seeks information on who makes the purchase decision for the venture's product or service, and who pays for the purchase. Other questions focus on market size and growth, channel and distribution challenges, and marketing and promotion needs.

The operations manager interview seeks information on the state of the idea in terms of prototypes and whether they have been tested. One should also attempt to assess what risks remain between now and successful market delivery and whether potential development or production concerns exist.

The financial manager interview seeks information on what length of time is projected before the venture will achieve breakeven, how will the venture be financed, and how much and when will outside financing be needed?

14. *Describe the characteristics of a viable venture opportunity. What is a VOS Indicator?*

A viable venture opportunity will meet a customer need, have a competitive advantage, be able to be brought to market quickly, and offer attractive investment returns compared to the risk associated with it. A VOS Indicator is a guide to help investors and entrepreneurs screen business opportunities. It contains a checklist for indicating the potential attractiveness of a proposed venture.

15. *Describe the factor categories used by venture capitalists and other venture investors when they screen venture opportunities for the purpose of deciding to invest.*

The categories used by venture investors to screen are the industry or market, pricing and profitability, the management team, and financial harvest indicators. **The market size of the industry**, now or expected in the future, is a critical factor in the likelihood that a venture can become high growth, with potential sales or revenues of more than \$100 million being required to scoring a “high” in terms of potential attractiveness.

Profitability, indicated by the gross profit margin, is one of the most important metrics for judging the potential for a viable business opportunity, with a large gross profit margin providing a cushion for covering related business expenses while still providing sufficient return for investors. In general, a gross profit margin greater than 50 percent indicates that a venture has the potential to be a high growth, high performance opportunity. The net profit margin may also be used to evaluate ventures, with after-tax greater margins greater than 20 percent suggesting the potential for a high growth, high performance venture.

Venture screening usually begins with an assessment of the **management team’s experience** and expertise, with a high score being given to a management team having both expertise and experience in the proposed business opportunity’s industry or market. Finally, venture investors give high scores to entrepreneurs who have given some thought in relation to providing investors with an exit from their venture investment.

Financial harvest indicators such as operating cash flow breakeven, free cash flow to equity, and internal rate of return (IRR) provide indications that a venture will be able to achieve an exit strategy, and returns to investors, in an acceptably short period of time.

16. *Describe ROA. Describe the two major ratio components that comprise the venture’s ROA model.*

The **return on assets** is a metric calculated by dividing the venture’s net after-tax profit by its venture total assets and it represents a measure of the firm’s performance relative to its invested assets. The return on assets measure can also be viewed in terms of the **return on assets (ROA) model** that expresses the return on assets as the product of the net profit margin and the assets turnover metrics or ratios. This relationship is depicted as follows:

$$\text{Return on Assets} = \text{Net Profit Margin} \times \text{Assets Turnover}$$

This also can be represented as:

$$\text{Net Profit/Total Assets} = \text{Net Profit/Revenues} \times \text{Revenues/Total Assets.}$$

Thus, the ROA of a venture is equal to its profit margin times its asset intensity.

17. *How do the concepts operating cash flow and free cash flow to equity differ?*

Operating cash flow is a measure of the cash generated by the daily operations of selling the company's product or service; it represents the figure that remains after the cost of goods sold and other business expenses (primarily general and administrative expenses along with marketing expenses or "SG&A") are subtracted from revenues. It approximates the operating cash flows over a specified time period, such as a year.

Free cash flow to equity is the cash available to the entrepreneur and venture investors after operating cash outflows, financing and tax cash flows, required investment in assets needed to sustain the venture's growth, and net increases in debt capital. Free cash flow to equity is calculated as the venture's revenues minus operating expenses, minus financing costs and tax payments, after adjustment for changes in net working capital (NWC), physical capital expenditures (CAPEX) needed to sustain and grow the venture, and net additional debt issues to support the venture's growth. In short: Free cash flow to equity = net profit + depreciation charges - Δ NWC - CAPEX + net new debt.

18. *What is a business plan? Why is it important to prepare a business plan?*

A **business plan** is a written document that describes the proposed venture in terms of the product or service opportunity, current resources, and financial projections. More formal business plan development is common in ventures moving from the development stage to the startup stage. The process of business planning is beneficial to the entrepreneur, who must be the first to believe the plan is reasonable. The entrepreneur must be convinced that starting this business is the right thing to do personally and professionally; the business plan reflects the excitement, opportunity, and reasonableness of the business idea to the members of the management team, potential investors, and other stakeholders.

19. *What are the major elements of a typical business plan?*

A typical business plan contains, in its Introduction, a cover page, confidentiality statement, table of contents, and executive summary. The Business Description section presents some of the considerations related to the venture opportunity-screening phase on industry/market factors. The Marketing Plan and Strategy section addresses the target market and customers, competition and market share, pricing strategy, and promotion and distribution. The Operations and Support section discusses how production methods or services will be delivered. The Management Team section presents the experience and expertise characteristics of the management team. In the Financial Plans and Projections, the business plan typically includes financial projections in the form of income statements, balance sheets, and statements of cash flows. These projections provide the basis for how the venture is expected to start up and operate over the next several years. The business plan should include a discussion of possible Problems or Risks.

The Appendix should contain the detailed assumptions underlying the projected financial statements in the Financial Plans and Projections section. It should also include a timeline with milestones indicating the amount and size of expected financing needs.

20. *What are real options? What types of real option opportunities are available to entrepreneurs?*

Real options are real or non-financial options available to a venture's managers as the venture progresses through its life cycle. Examples of real options include growth options, flexibility options, learning options, and even exit options. Growth options represent the possibility that, if the venture's market begins to grow rapidly, an initial toehold position in a scalable technology or service may provide a platform for quick expansion to capture market share. Flexibility or learning options may develop when an investment in new technology has multiple potential applications and revenue streams. Exit options relate to the venture's ability to provide a return in a variety of ways other than remaining as a free-standing venture. The venture's intellectual property can be licensed or purchased by other firms, the venture can be absorbed into another public or private entity or the venture can remain independent and use its cash flow to provide a return for the investors.

21. *From the Headlines--Brooklyn Brew Shop: briefly describe how the idea of a small square footage apartment-based brewing device became a startup enterprise.*

Answers will vary: Stephen Valand and Erica Shea, after noting that home brewing in high rent apartments would require a reduced footprint and equipment that would most likely be visible to guests, designed their own home brewing kits and started to sell them at the Brooklyn Flea Market. As demand grew, they introduced a higher volume kit and established a presence in stores and on the internet. They used \$10,000 in personal savings and the revenue from the flea market sales to cover costs and growth reinvestments while seeking startup assistance where they could find it, including a local university's law clinic.

INTERNET ACTIVITIES

1. *Access the Inc. magazine Web site at www.inc.com. Identify a list of recent articles that relate to how business opportunities are evaluated by venture investors and/or articles discussing why venture investors chose not to invest in potential business opportunities.*

Web-researched results vary due to constant updating of the related web sites.

2. *Access the Center for Business Planning Web site at www.businessplans.org. The site provides examples of business plans prepared by MBA students from top business schools and presented to panels of investors at recent Moot Corp. competitions hosted by the University of Texas at Austin. Review one of the business plans. Write a brief summary comparing the segments or elements included in the business plan to the key elements of a typical business plan presented in the chapter.*

Web-researched results vary due to constant updating of the related web sites.

3. *Access the Center for business Planning Web site at: www.businessplans.org. Find the reference to PlanWrite which is designed to help an entrepreneur to create a business plan. Identify and briefly describe what this software product provides.*

Web-researched results vary due to constant updating of the related web sites.

EXERCISES/PROBLEMS AND ANSWERS

1. [Basic Financial Ratios] A venture recorded revenues of \$1 million last year and net profit of \$100,000. Total assets were \$800,000 at the end of last year.

A. Calculate the venture's net profit margin.

$$\text{Net Profit Margin: net profit/revenues} = \$100,000/\$1,000,000 = 10.0\%$$

B. Calculate the venture's asset turnover.

$$\text{Asset Turnover: revenues/total assets} = \$1,000,000/\$800,000 = 1.25 \text{ times}$$

C. Calculate the venture's return on total assets.

$$\text{Return on Total Assets: net profit/total assets} = \$100,000/\$800,000 = 12.5\%$$

2. [Financial Ratios and Performance] Following is financial information for three ventures:

	<u>Venture XX</u>	<u>Venture YY</u>	<u>Venture ZZ</u>
After-tax Profit Margins	5%	15%	25%
Asset Turnover	2.0 times	1.0 times	3.0 times

A. Calculate the return on assets (ROA) for each firm.

$$\text{Venture XX: } 5\% \times 2.0 = 10\%$$

$$\text{Venture YY: } 15\% \times 1.0 = 15\%$$

$$\text{Venture ZZ: } 25\% \times 3.0 = 75\%$$

B. Which venture is indicative of a strong entrepreneurial venture opportunity?

Venture ZZ seems to represent a strong entrepreneurial venture opportunity based on a very high return on assets financial measure.

C. Which venture seems to be more of a commodity type business?

Venture XX seems to be more of a commodity type of business as indicated by a relatively low return on assets.

D. How would you place these three ventures on a graph similar to Figure 2.10?

Venture ZZ would be a Case 1 type of venture opportunity (very high profit margin).

However, Venture ZZ's also high turnover would place the venture above the ROA curve (with an ROA of 75% as calculated in Part A.). Venture XX would be a Case 2 type of venture opportunity (low profit margin with a moderate asset turnover) resulting in a ROA

of 10% (see Part A). Venture YY would fall between the other two ventures (a relatively high profit margin and a low asset turnover ratio) resulting in an ROA of 15% (see Part A).

E. Use the information in Figure 2.9 relating to pricing/profitability, and “score” each venture in terms of potential attractiveness.

Pricing/Profitability	Venture XX	Venture YY	Venture ZZ
Gross margins	NA	NA	NA
After-tax margins	1	2	3
Asset intensity	2	2	2
Return on assets	<u>2</u>	<u>2</u>	<u>3</u>
Total points	5	6	8

3. [Revenues, Costs, and Profits] In early 2013, Jennifer (Jen) Liu and Larry Mestas founded Jen and Larry’s Frozen Yogurt Company, which was based on the idea of applying the microbrew or microbatch strategy to the production and sale of frozen yogurt. They began producing small quantities of unique flavors and blends in limited editions. Revenues were \$600,000 in 2013 and were estimated at \$1.2 million in 2014. Because Jen and Larry were selling premium frozen yogurt containing premium ingredients, each small cup of yogurt sold for \$3 and the cost of producing the frozen yogurt averaged \$1.50 per cup. Other expenses plus taxes averaged an additional \$1 per cup of frozen yogurt in 2013 and were estimated at \$1.20 per cup in 2014.

A. Determine the number of cups of frozen yogurt sold each year.

Revenue = Price per unit x units sold, and Revenue / Price per unit = units sold:

Units Sold for 2013 = 600,000/3 = 200,000 units

Units Sold for 2014 = 1,200,000/3 = 400,000 units

B. Estimate the dollar amounts of gross profit and net profit for Jen and Larry’s venture in 2013 and 2014.

	2013	2014
Revenue	\$ 600,000	\$ 1,200,000
COGS (Units x COGS per Unit)	<u>300,000</u>	<u>600,000</u>
Gross Profit	300,000	600,000
OE + Tax	<u>200,000</u>	<u>480,000</u>
Net Profit	\$100,000	\$120,000

C. Calculate the gross profit margins and net profit margins in 2013 and 2014.

Gross Profit Margin = Gross Profit/Revenues

Net Profit Margin = Net Profit/Revenues

Gross Profit Margin in 2013 = Gross Profit/Sales = 300,000/600,000 = 50%
Net Profit Margin in 2013 = Net Profit/Sales = 100,000/600,000 = 16.7%

Gross Profit Margin in 2014 = Gross Profit/Sales = 600,000/1,200,000 = 50%
Net Profit Margin in 2014 = Net Profit/Sales = 120,000/1,200,000 = 10%

D. *Briefly describe what has occurred between the two years.*

The gross profit margins are the same in the two years because the “cost of goods sold per unit” stays the same. However, 2014’s net profit margin declines because of the increase in the other expenses category.

4. *[Returns on Assets] Jen and Larry’s frozen yogurt venture described in Problem 3 required some investment in bricks and mortar. Initial specialty equipment and the renovation of an old warehouse building in Lower Downtown, referred to as LoDo, cost \$450,000 at the beginning of 2013. At the same time, \$50,000 was invested in inventories. In early 2014, an additional \$100,000 was spent on equipment to support the increased frozen yogurt sales in 2014. Use information from Problem 3 and this problem to answer the following questions.*

A. *Calculate the return on assets in both 2013 and 2014.*

Total Assets 2013 = Warehouse + Inventory = \$450,000 + \$50,000 = \$500,000
Total Assets 2014 = Warehouse + Inventory + Additional Capital Expenditure
= \$450,000 + \$50,000 + \$100,000 = \$600,000

Return on Assets (ROA) = Net Profit/Total Assets
ROA for 2013 = 100,000/500,000 = 20%
ROA for 2014 = 120,000/600,000 = 20%

B. *Calculate the asset intensity or asset turnover ratios for 2010 and 2011.*

Asset Intensity = Assets Turnover = Revenues/Total Assets
Asset Turnover Ratio for 2013 = 600,000/500,000 = 1.20
Asset Turnover Ratio for 2014 = 1,200,000/600,000 = 2.00

C. *Apply the ROA Business Model to Jen and Larry’s frozen yogurt venture.*

ROA Business Model = Net Profit Margin x Asset Turnover Ratio
ROA for 2013 = 16.67% x 1.2 = 20%
ROA for 2014 = 10% x 2.0 = 20%

D. *Briefly describe what has occurred between the two years.*

The Returns on Assets were the same in the two years because the company’s Net Profit Margins went down due to the increased operation expenses while Asset Intensity went up due to additional capital expenditure on equipment.

E. *Show how you would position Jen and Larry's frozen yogurt venture in terms of the relationship between net profit margins and asset turnovers depicted in Figure 2.10.*

In relation to Figure 2.10, one should position Jen and Larry's frozen yogurt venture in Case 1 where the company has high profit margin and low assets turnover.

In Case 2, companies compete on price, have very low profit margin and high assets turnover. If the company is incapable of becoming a market leader, it will be squeezed out as the industry grows.

5. *[VOS Indicator™ Screening] Jen Liu and Larry Mestas are seeking venture investors to help fund the expected growth in their Frozen Yogurt venture described in Problems 3 and 4. Use the VOS Indicator's guidelines presented in Figures 2.8 and 2.9 to score Jen and Larry's frozen yogurt venture in terms of the items in the pricing/profitability factor category. Comment on the likely attractiveness of this business opportunity to venture investors.*

Gross Margin: 50%, 50% ("High")

After-Tax Margin: 16.7%, 10% ("Average")

Asset Intensity: 1.2, 2 ("Average")

ROA: 20%, 20% ("Average")

This is an "Average" opportunity.

6. *[Ethical Issues] Assume that you have just "run-out-of-money" and are unable to move your "idea" from its development stage to production and the startup stage. However, you remain convinced that with a reasonable amount of additional financial capital you will be a successful entrepreneur. While your expectations are low, you are meeting with a loan officer of the local bank in the hope that you can get a personal loan in order to continue your venture.*

A. *As you are about to enter the bank, you see a bank money bag lying on the street. No one is around to claim the bag. What would you do?*

Many entrepreneurs state that high ethical standards are one of a venture's most important assets and are critical to long-term success and value. High ethical standards involve following laws, regulations, and treating others honestly and fairly. The money, if any, in the money bag does not belong to you—it is someone else's property. Most people would agree that you should turn the money bag in to the bank immediately.

It is possible, but should not be expected and thus should not be part of your decision, that your high ethical standards might have an indirect impact on your being able to obtain a personal loan from the bank to continue your venture.

B. *Now, let's assume that what you found lying on the street was a \$100 bill. The thought crosses your mind that it would be nice to take your significant other out for a nice dinner— something that you have not had for several months. What would you do?*

Unless you see someone drop the \$100 bill it will be very difficult to identify the owner of the bill. However, the money does not belong to you. Most people would agree that you should not just “pocket” the \$100 bill but should make an attempt to find its owner. Since you are outside the bank, you might enter the bank, indicate that you found a \$100 bill outside the bank, and enquire whether someone has reported losing a \$100 bill.

C. Now, instead of \$100 you “find” a \$1 bill on the street. The thought crosses your mind that you could buy a lottery ticket with the dollar. Winning the lottery would certainly solve all your financing needs to start and run your venture. What would you do?

When the amount of money “found” is very small, such as \$1, people often behave differently than when the amount of money is large. First, it is virtually impossible to identify the owner unless you saw a specific person drop the \$1 bill. Second, the time and energy involved in trying to find the rightful owner likely will outweigh the value of the money. Again, the money is not rightfully yours. Most people would probably say that if you can’t immediately identify the rightful owner, the \$1 becomes “yours.”

It is up to you to decide whether keeping the \$1 bill jeopardizes your own personal high ethical standards. Purchasing a lottery ticket with the dollar represents another personal decision.

SUPPLEMENTAL EXERCISES/PROBLEMS AND ANSWERS

[Note: These activities are for readers with an existing understanding of financial statements (i.e., income statements and balance sheets). For other readers, these exercises/problems can be worked after covering Chapter 4.]

7. *[Revenues, Profits, and Assets] Refer to the information on the three ventures in Problem 2.*

A. If each venture had net sales of \$10 million, calculate the dollar amount of net profit and total assets for Venture XX, Venture YY, and Venture ZZ.

	Net Profit	Total Assets
Venture XX	$\$10,000,000 \times .05 = \$500,000$	$\$10,000,000/2.0 = \$5,000,000$
Venture YY	$\$10,000,000 \times .25 = \$2,500,000$	$\$10,000,000/3.0 = \$3,333,333$
Venture ZZ	$\$10,000,000 \times .15 = \$1,500,000$	$\$10,000,000/1.0 = \$10,000,000$

B. Which venture would have the largest dollar amount of net profit?

Venture YY would have the largest net profit at \$2,500,000.

C. Which venture would have to largest dollar amount of total assets?

Venture ZZ would have the largest total assets at \$10,000,000.

8. *[Ratio Calculations from Financial Statements] Ricardo Martinez has prepared the following financial statement projections as part of his business plan for starting the Martinez Products Corporation. The venture is to manufacture and sell electronic components that make standard overhead projectors “smart.” In essence, through voice commands a projector can be turned on or off, and the brightness of the projection altered. This will allow the user to avoid audience annoyances associated with a bright projection light during periods when no overhead transparency is being used. Venture investors usually screen prospective venture opportunities in terms of projected profitability and financial performance.*

A. *Use the following projected financial statements for Martinez Products and calculate financial ratios showing the venture’s projected: (a) gross profit margin, (b) net profit margin, (c) asset intensity, and (d) return on assets.*

$$\text{Gross Profit Margin} = \text{Gross Profit/Sales} = 100,000/200,000 = 50\%$$

$$\text{Net Profit Margin} = \text{Net Income/Sales} = 15,000/200,000 = 7.5\%$$

$$\text{Asset Intensity} = \text{Sales/Total Assets} = 200,000/100,000 = 2.0$$

$$\text{Return on Assets} = \text{Net Income/Total Assets} = 15,000/100,000 = 15\%$$

B. *The ratios calculated in Part A are found in the venture opportunity screening guide discussed in the chapter. Rate the potential attractiveness of the Martinez Products venture using the guidelines for the pricing/profitability factor category for the VOS Indicator.*

The VOS Indicator shows that three of the pricing/profitability indicators are average while after-tax margins are low in attractiveness. The scoring suggests a low-to-average appraisal of this venture opportunity.

Martinez Products Corporation
Projected Income Statement for Year 1

Sales	\$200,000
Cost of goods sold	<u>-100,000</u>
Gross profit	100,000
Operating expenses	-75,000
Depreciation	<u>-4,000</u>
Earnings before interest & taxes	21,000
Interest	<u>-1,000</u>
Earnings before taxes	20,000
Taxes (25%)	<u>-5,000</u>
Net income	\$15,000

Martinez Products Corporation
Projected Balance Sheet for End of Year 1

Cash	\$ 10,000	Accounts payable	\$ 15,000
Accounts receivable	20,000	Accrued liabilities	10,000
Inventories	<u>20,000</u>	Bank loan	<u>10,000</u>
Total current assets	50,000	Total current liabilities	35,000
Gross fixed assets	54,000	Common stock	53,000
Accumulated depreciation	<u>4,000</u>	Retained earnings	<u>12,000</u>
Net fixed assets	<u>50,000</u>	Total equity	<u>65,000</u>
Total assets	100,000	Total liabilities & equity	\$100,000

9. [Ratio Calculations] Ricardo Martinez, the founder of the Martinez Products Corporation (see Problem 8), projects sales to double to \$400,000 in the second year of operation.

A. If the financial ratios calculated for Year 1 in Problem 8 remain the same in Year 2, what would be Martinez's dollar amount projections in his business plan for: (a) gross profit, (b) net profit or income, and (c) total assets?

$$\text{Gross Profit} = \text{Gross Profit Margin} \times \text{Revenue} = 50\% \times 400,000 = 200,000$$

$$\text{Net Profit} = \text{Net Profit Margin} \times \text{Revenue} = 7.5\% \times 400,000 = 30,000$$

$$\text{Total Assets} = \text{Total Revenue/Asset Intensity} = 400,000/2.00 = 200,000$$

B. How would your answers change in Part A if the gross profit margin in the second year is projected to be 60%, the net profit margin 25%, and the asset intensity at a 5 times turnover?

$$\text{Gross Profit} = 400,000 \times 60\% = 240,000$$

$$\text{Net Profit} = 400,000 \times 25\% = 100,000$$

$$\text{Total Assets} = 400,000/5.00 = 80,000$$

C. Use the projected ratio information in Part B in the return on assets (ROA) model to determine the projected percentage rate of return on assets.

$$\text{ROA} = \text{Net Profit Margin} \times \text{Assets Turnover} = 25\% \times 5.00 = 125\%$$

(Note that 125% is an unusually high ROA, but not necessarily uncommon given the optimism in many business plans).

MINI CASE: LEARNRITE.COM CORPORATION

LearnRite.com offers e-commerce service for children's "edutainment" products and services. The word edutainment is used to describe software that combines "educational" and "entertainment" components. Valuable product information and detailed editorial comments are combined with a wide selection of products for purchase to help families make their kids' edutainment decisions. A team of leading educators and journalists provide editorial comments on the products sold by the firm. LearnRite targets highly educated, convenience oriented, and

value conscience families with children under the age of 12, estimated to be about 35 percent of Internet users.

The firm’s warehouse-distribution model results in higher net margins, as well as greater selection and convenience for customers, when compared to traditional retailers. Gross profit margins are expected to average about 30 percent each year. Because of relatively high marketing expenditures aimed at gaining market share, the firm is expected to suffer net losses for two years. Marketing and other operating expenses are estimated to be \$3 million in 2014 and \$5 million in 2015, respectively. However, during the third year operating cash flow breakeven should be reached. Net profit margins are expected to average 10 percent per year beginning in year 3. Investment in bricks and mortar is largely in the form of warehouse facilities and a computer system to handle orders and facilitate the distribution of inventories. After considering the investment in inventories, the asset intensity or turnover is expected to average about two times per year.

LearnRite estimates that venture investors should earn about a 40 percent average annual compound rate of return and sees an opportunity for a possible initial public offering in about six years. If industry consolidation occurs, a merger might occur even sooner.

The management team is headed by Srikant Kapoor who serves as President of LearnRite.com and who personally controls about 35 percent of the ownership of the firm. Mr. Kapoor has more than twelve years experience in high-tech industries including previous positions with US West and Microsoft. He holds a B.S. degree in electrical engineering from an Indian technology institute and an MBA from a major U.S. university. Sean Davidson, Director of Technology has more than ten years of experience in software development and integration. Walter Vu has almost ten years of experience in sales and business development in the software industry including positions at Claris and Maxis. Mitch Feldman, Director of Marketing, was responsible for six years for the marketing communications function and the Internet operations of a large software company. Management strives for continual improvement in ease of user interface, personalized services, and amount of information supplied to customers. The total market for children’s entertainment is estimated to be \$35 billion annually. Toys account for about \$20 billion in annual spending. Summer camps are estimated to generate \$6 billion annually. This is followed by children’s videos and video games at \$4 billion each. Children’s software sales currently generates about \$1 billion per year in revenues and industry sales are expected to grow at a 30 percent annual rate over the next several years. LearnRite has made the following five-year revenue projections:

Year	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
Revenues (\$M)	\$1.0	\$9.6	\$30.1	\$67.8	\$121.4

- A. *Project industry sales for children’s software through the year 2018 (not 2015) based on the information provided above.*

2014	Market for Children’s Entertainment:
Toys	\$20 billion
Summer camps	6 billion
Children’s videos/games	4 billion
Children’s software sales	1 billion
Miscellaneous	<u>4 billion</u>
Total Market	\$35 billion

Children's Software Sales Growing at 30% annually:
 Year 2015 Sales = Year 2014 Sales x 1.30; and so forth.

<u>Year</u>	<u>Industry Forecasted Sales</u>
2014	\$1.00 billion
2015	1.30 billion
2016	1.69 billion
2017	2.20 billion
2018	2.86 billion

- B. Calculate the year-to-year annual sales growth rates for LearnRite. [Optional: Estimate the compound growth rate over the 2014 through 2018 time period using a financial calculator or computer software program.]

$$\text{Growth Rate} = [(\text{Next Year Sales} - \text{Current Year Sales}) / \text{Current Year Sales}] \times 100$$

<u>Year</u>	<u>LearnRite Forecasted Sales</u>	<u>Sales Growth Rate</u>
2014	\$1.00 million	
2015	9.60 million	860%
2016	30.10 million	214%
2017	67.80 million	125%
2018	121.40 million	79%

$$\text{Arithmetic average} = (860\% + 214\% + 125\% + 79\%) / 4 = 320\%$$

Compound average (using a financial calculator and point-to-point estimate between 2014 and 2018) = 232%

[Enter: present value = -1.00; future value = 121.40; number of periods = 4; then solve for %i]

$$\text{Geometric average} = [(1 + 860) \times (1 + 214) \times (1 + 125) \times (1 + 79)]^{1/4} = 208\%$$

- C. Estimate LearnRite's expected market share in each year based on the above data.

Note: use data for the kid's software industry from (A) and for LearnRite from (B).

<u>Year</u>	<u>Percent of Industry Sales</u>
2014	0.1%
2015	0.7%
2016	1.8%
2017	3.1%
2018	4.2%

- D. Estimate the firm's net income (loss) in each of the five years.

<u>Year</u>	<u>Net Income (Loss)</u>
-------------	--------------------------

2014	\$-2.70 million
2015	-2.12 million
2016	3.01 million
2017	6.78 million
2018	12.14 million

Year 2014: Gross profit is \$0.30 million (\$1.0 million sales x .30 margin) less marketing expenses of \$3 million produces a loss of \$2.70 million

Year 2015: Gross profit is \$2.88 million (\$9.6 million sales x .30 margin) less marketing expenses of \$5 million produces a loss of \$2.12 million

Years 2016-2018: Net profit is 10% of that year's forecasted sales

- E. *Estimate the firm's return on assets beginning when the net or after-tax income is expected to be positive.*

<u>Year</u>	<u>Millions of Dollars:</u>			<u>Return</u>
	<u>Net Income</u>	<u>/</u>	<u>Forecasted Assets</u>	
2014	\$-2.70	/	\$0.50	= -540.0%
2015	-2.12	/	4.80	= -44.2%
2016	3.01	/	15.05	= 20.0%
2017	6.78	/	33.90	= 20.0%
2018	12.14	/	60.70	= 20.0%

Note: Since the asset intensity or turnover is 2.00, total assets will be one-half of forecasted sales. Alternatively, return on assets = net profit margin (10.0%) times asset turnover (2.0 times) = 20.0%

- F. *Score LearnRite's venture investor attractiveness in terms of the Industry/Market Factor Category using the VOS Indicator guide and criteria set out in Figures 2.8 and 2.9. If you believe there are insufficient data, indicate that decision with an "N/A."*

<u>Industry/Market</u>	<u>Score</u>
Market Size Potential: kid's software sales = \$1 billion	High
Venture Growth Rate: greater than 30% annually	High
Market Share (Year 3): 1.8% of industry sales	Low
Entry Barriers: possible timing barriers	Average

- G. *Score LearnRite's venture investor attractiveness in terms of pricing/profitability factors. Follow the instructions in Part F.*

<u>Pricing/Profitability</u>	<u>Score</u>
Gross Margins: 30% margins are estimated	Average
After-Tax Margins: 10% margins are estimated	Average
Asset Intensity: 2.0 asset turnovers are estimated	Average
Return on Assets: 20% returns are estimated	Average

H. *Score LearnRite’s venture investor attractiveness in terms of financial/harvest factors. Follow the instructions in Part F.*

<u>Financial/Harvest</u>	<u>Score</u>
Cash Flow Breakeven: estimated to occur in Year 3	Average
Rates of Return: 20% investor returns are estimated	Average
IPO Potential: estimated in Year 6	Low
Founder’s Control: 35% ownership by founder	Average

I. *“Score” LearnRite’s venture investor attractiveness in terms of management team factors. Follow the instructions in Part F.*

<u>Management Team</u>	<u>Score</u>
Experience/Expertise: very good in software/tech industries	High
Functional Areas: good except for finance	Average
Flexibility/Adaptability: experience suggests flexibility	Average
Entrepreneurial Focus: startup risks accepted by founder/team	Average

J. *Determine overall total points and an average score for LearnRite as was done for the Companion Systems Corporation in the Appendix. Items where information is judged to be lacking and an NA is used should be excluded when calculating an average score.*

The “labels” assigned in (F) through (I) for LearnRite can be summarized as follows:

<u>Category</u>	<u>Number</u>	x	<u>Points Per</u>	=	<u>Total Points</u>
High	3		3		9
Average	11		2		22
Low	<u>2</u>		1		<u>2</u>
Totals	16				33

Average score = $33/16 = 2.06$

K. *Provide a brief written summary indicating how you feel about LearnRite.com as a business opportunity.*

We have “scored” each of the 16 items. Of course, it could be argued that adequate information might be lacking for one or more of the items and an NA could have been assigned until the information was acquired. However, even after substantial due diligence efforts are completed, scoring “judgments” will still have to be made. [We note that differences in industry knowledge, attitudes towards risk preferences, etc. might lead individual instructors and/or students to “score” certain items differently than we have. Such differences in opinion should help enliven the discussion of the mini case and provide recognition that deciding to become an entrepreneur is not for everyone.]

We have assigned “average” scores to about two-thirds of the items, which accounts for a score around 2. Of course, it is important we recognize that the venture opportunity-screening guide we are employing is very demanding due to its focus on venture investor expectations. While an idea/opportunity with an average score (1.67 to 2.33) may find it somewhat difficult to attract venture capital, it may still constitute a viable business opportunity. The risks associated with the LearnRite venture are potentially high, but the rewards are also potentially large. As a result, LearnRite could be very successful and generate substantial wealth for the founder and the management team.