PN-ADC-656

Agriculture-Led Export Businesses

Supporting Egypt's Processed Foods Export Industry

Project funded by USAID

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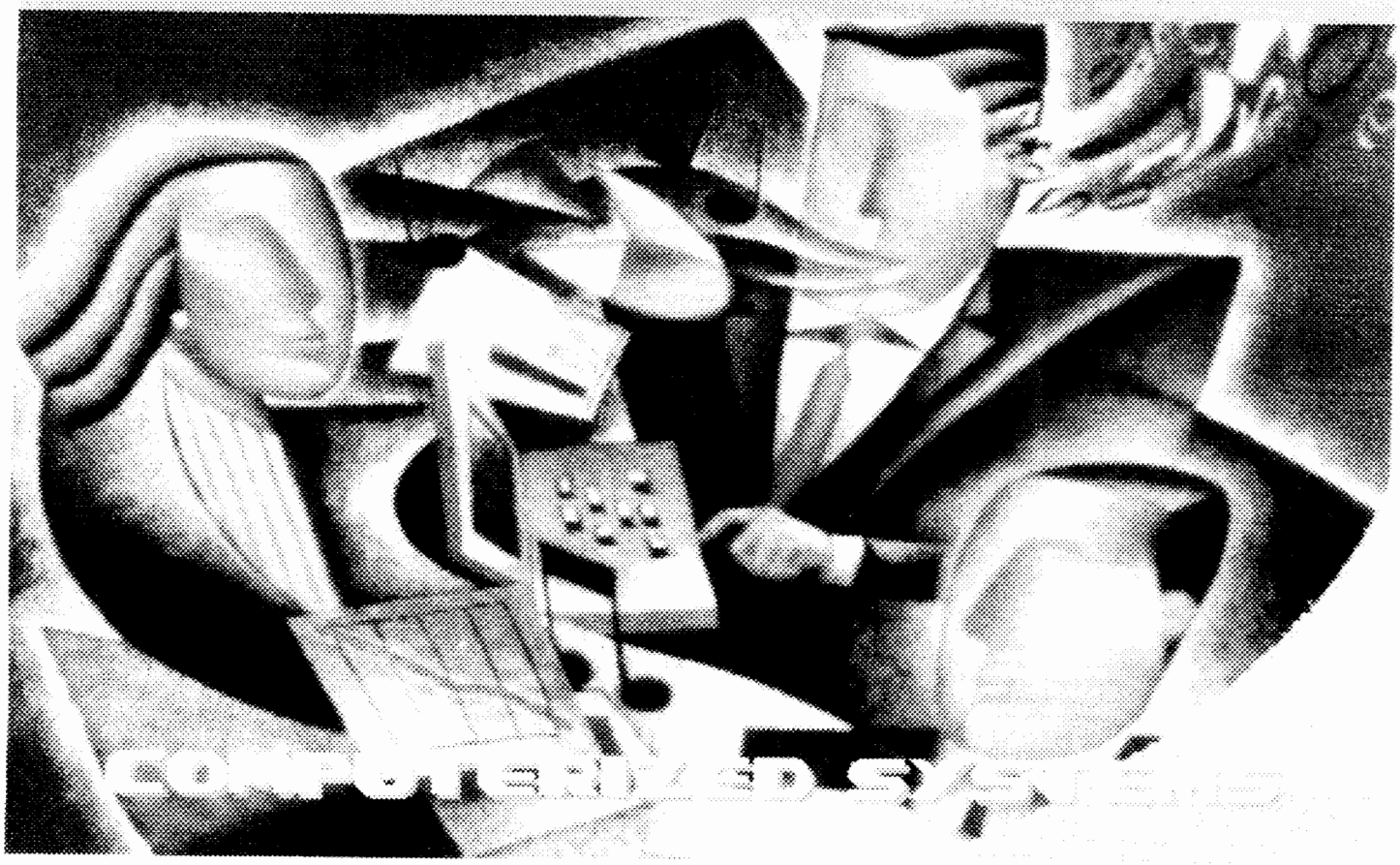
Business Planning



1

WORKBOOK

1.0 Executive Summary

Although this topic appears first in the plan, you normally write it last. Wait until you're almost done so you can include the main highlights. You should cover the most important facts, such as sales growth, profitability, strategic focus, and those facts may change during the planning process.

The contents of the summary depend on the goals of your plan. For example, if you are selling a business idea to investors, then you should include highlights that will invite and encourage potential investors to read on. That might be growth rates, competitive edge, an exciting new technology, etc.

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1.1 Objectives

Objectives are business goals. Set your market share objectives, sales objectives, and profit objectives. Companies need to set objectives and plan to achieve them.

Make sure your objectives are concrete and measurable. Be specific, such as achieving a given level of sales or profits, a percentage of gross margin, a growth rate, or a market share. Don't use generalities like "being the best" or "growing rapidly."

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4

1.2 Mission Statement

Use the mission statement to define your business concept. A company mission statement should define underlying goals (such as making a profit) and objectives in broad strategic terms, including what market is served and what benefits are offered.

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5

1.3 Keys to Success

The idea of keys to success is based on the need for focus. You can't focus efforts on a few priorities unless you limit the number of priorities. In practice, lists of more than three or four priorities are usually less effective. The more priorities (beyond three or four), the less chance of implementation.

Virtually every business has different keys to success. These are a few factors that make the difference between success and failure. This depends on who you are and what services you offer.

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6

2.0 Company Description

Take a paragraph or two to introduce your business. Explain where it will be established, what type of legal entity you expect to form, who will own it, and how ownership will be divided.

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2.1 Company Ownership

In this paragraph, describe the ownership and legal establishment of the company. This is mainly specifying whether your company is a corporation, partnership, sole proprietorship, or some other kind of legal entity, such as a limited liability partnership. You should also explain who owns the company, and, if there is more than one owner, in what proportion.

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8

2.2 Start-up Plan

This topic appears when you're a start-up and your plan is for a new company with no history.

This topic explains the details of your expenses and assets listed in your start-up table that will be linked to this topic.

The cash you want to have in the bank at start-up is different from the money raised to start the business. The total money raised must match what was spent as expenses and assets. The cash at start-up is one of the assets. If you increase the amount of money raised, then you have to increase the start-up assets, usually by increasing the starting cash.

You have to fund start-up expenses as well as starting assets.

As with every business balance, assets must be equal to capital plus liabilities. Therefore, add up the investment you expect plus all the initial liabilities. Subtract that sum from total assets. The difference is called loss at start-up.

You can tell that you have not accounted for all your incoming financing by looking at the "loss at start-up" value. That should be the same number as total start-up expenses (except negative). If it is more negative than start-up expenses are positive, then you have brought in funds that haven't been accounted for. You can fix that by adding more money into your starting cash to account for the additional financing.

Legal	
Stationery, etc.	
Brochures	
Consultants	
Insurance	
Rent	
Research and Development	
Expensed Equipment	
Other	
Total Start-up Expenses	
Start-up Assets Needed	
Cash Requirements	
Start-up Inventory	
Other Short-term Assets	
Total Short-term Assets	
Long-term Assets	
Total Assets	
Total Start-up Requirements	
Left to Fund	
[illegible]	
[illegible]	
Investor 1	
Investor 2	
Other	
Total Investment	
Short-term Liabilities	
Unpaid Expenses	
Short-term Loans	
Interest-free Short-term Loans	
Subtotal Short-term Liabilities	
Long-term Liabilities	
Total Liabilities	
Loss at Start-up	
Total Capital	
Total Capital and Liabilities	
Checkline	

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2.2 Company History

This topic appears when your business plan is for an existing or ongoing company, instead of a start-up company.

Use this topic to cover past performance. The topic is normally linked to the past performance table, which presents financial highlights for the last three years and starting balances for the next three. Explain why your sales and profits have changed. If you've had important events, like particularly bad years or good years, or new services, new locations, new partners, etc., then include that background here.

Past Performance	Y1	Y2	Y3
Sales			
Gross Margin			
Gross % (calculated)			
Operating Expenses			
Collection period (days)			
Inventory turnover			
Balance Sheet			
Short-term Assets	Y1	Y2	Y3
Cash			
Accounts receivable			
Inventory			
Other Short-term Assets			
Total Short-term Assets			
Long-term Assets			
Capital Assets			
Accumulated Depreciation			
Total Long-term Assets			
Total Assets			
Capital and Liabilities			
	Y1	Y2	Y3
Accounts Payable			
Short-term Notes			
Other ST Liabilities			
Subtotal Short-term Liabilities			
Long-term Liabilities			
Total Liabilities			
Paid in Capital			
Retained Earnings			
Earnings			
Total Capital			
Total Capital and Liabilities			
Other Inputs			
Payment days			
Sales on credit			
Receivables turnover			

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2.3 Company Locations and Facilities

Briefly describe offices and locations of your company, the nature and function of each, square footage, lease arrangements, etc. For example, if you are a service business, you probably don't have major manufacturing plants, but you might have Internet services, office facilities, and telephone systems that are relevant to providing service. It is conceivable that your Internet connection, as one hypothetical case, might be critical to your business.

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3.0 Product (or Service) Description

NOTE: References to products are interchangeable with services.

List and describe the products your company will sell. For each of them, cover the main points, including what it is, what customer need does it address, at what relative price point, and how is it different from other products or services that address the same need. If you think it's important, describe the technology involved, the manufacturing cost, distribution, packaging, pricing, what sorts of customers make purchases, and why. What are the important features and benefits?

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12

3.1 Product (or Service) Description

NOTE: References to products are interchangeable with services.

The previous topic was the summary, so this one provides more detail. List and describe the products your company manufactures. For each product, cover the main points, including what the product is, technology, manufacturing cost, distribution, packaging, pricing, what sorts of customers make purchases and why. What customer need does each product fill? What are the important features and benefits?

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3.2 Competitive Comparison

NOTE: References to products are interchangeable with services.

Use this topic for a general comparison of your product offering as one of several choices a potential buyer can make. There is a separate topic in the market analysis chapter for detailed comparison of strengths and weaknesses of your specific competitors.

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14

3.3 Sales Literature

List any existing sales literature you will include with your finished plan.

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3.4 Sourcing

How do you get the products you sell and at what cost? Use this topic to explain in as much detail as you think practical, depending on the specifics of your plan. Additional details depend on the nature of your business and the purpose of your plan. If you are a manufacturer or a retailer, you should describe your sources of materials.

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16

3.5 Technology

Describe the current, and new, technologies which impact your ability to produce these goods or services.

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3.6 Future Products (or Services)

What future products or services are on your drawing board? Is there a relationship between market segments, market demand, market needs, and product development?

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4.0 Market Analysis Summary

This first paragraph is a simple summary. Assume this paragraph might be included in a loan application or summary memo, so you need it to summarize the rest of the chapter. What information would be most important if you had only one brief topic to include about your market?

Without going into great detail, you should generally describe the different groups of target customers included in your market analysis, and refer briefly to why you are selecting these as targets. You may also want to summarize market growth, citing highlights of growth projections.

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4.1 Market Segmentation

Explain the potential customers analysis table, which is normally linked to it. Your analysis is based on a list of potential customer groups, each of which is a market segment. Explain how your segments are defined. The market segmentation concept is crucial to market assessment and market strategy. Divide the market into workable market segments -- by age, income, product type, geography, buying patterns, customer needs, or other classification.

Market Analysis		
Potential Customers	# of Customers	Growth rate (%)

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20

4.2 Target Market Segment Strategy

In this topic you should introduce the strategy behind your market segmentation and your choice of target markets. Explain why your business is focusing on these specific target market groups. What makes these groups more interesting than the other groups that you've ruled out? Why are the characteristics you specify important?

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4.2.1 Market Needs

This topic is a good reminder that all marketing should be based on underlying needs. For each market segment included in your strategy, explain the market needs that lead to this group's wanting to buy your product or service.

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4.2.2 Market Trends

To describe market trends, think strategically. What factors seem to be changing the market or changing the business? What developing trends can make a difference? Market trends could be changes in demographics, changes in customer needs, new sense of style or fashion, or something else. It depends on what business you are in

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4.2.3 Market Growth

Use this topic to explain and discuss market growth. Ideally you cite experts, a market expert, market research firm, trade association, or credible journalist, projecting market growth. This is particularly important when your plan is related to finding investors or supporting a loan application because market growth enhances the implied value of your business.

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4.3 Industry Analysis

This topic summarizes the sub-topics that follow, explaining the type of business. The sub-topics look at the size and concentration of businesses in this group, the way services are bought and sold, and specific competitors. Depending on what you need for your specific plan, you could leave a brief summary in this topic and let the main information come in the following ones, or you could decide that all you need is a paragraph or two here, then delete the sub-topics. Remember that form follows function, so if describing your industry doesn't change any of your business decisions, and you are not using the plan to describe your business to an outsider, then you may not need to include this description at all.

A complete business plan discusses industry economics, participants, distribution patterns, factors in the competition, and whatever else describes the nature of this business to outsiders. For research, there are websites for analysis, financial statistics, demographics, trade associations, and just about everything you'll need for a complete business plan.

NOTE: Please refer to Chapter 8, The Business You're In, for suggested resources.

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25

4.3.1 Industry Participants

Explain the nature of the industry. There is a huge difference, for example, between an industry like long-distance trunk services, in which there are only a few huge companies in any one country, and one like dry cleaning, in which there are tens of thousands of smaller participants. This topic is supposed to present a summary of this factor.

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4.3.2 Distribution Patterns

Explain how distribution works in this industry. Does it have regional distributors, as is the case for computer products, magazines, or auto parts? Does it depend on direct sales to large industrial customers? Do manufacturers support their own direct sales forces?

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4.3.3 Competition and Buying Patterns

Explain the general nature of competition in this business and how the customers seem to choose one provider over another. In the computer business, for example, competition might depend on reputation and trends in one part of the market and on channels of distribution and advertising in another. In many business-to-business industries, the nature of competition depends on direct selling because channels are impractical. Price is vital in products competing with each other on retail shelves, but delivery and reliability might be more important for materials used by manufacturers in volume, for which a shortage can affect an entire production line.

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4.3.4 Main Competitors

You've referred to competition already in previous topics, in terms of general factors and the nature of competition. Use this topic to list your specific competitors and the strengths and weaknesses of each.

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5.0 Strategy and Implementation Summary

Summarize the sales and marketing strategy. Details will come in the following topics, so keep this summary short, covering just the main points.

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5.1 Strategy Pyramids

This topic is intended to help you think about strategy, not to make a business plan more difficult. If this framework for analysis doesn't work for you, don't worry about it.

Imagine a pyramid made of three levels. The top of the pyramid is a single box, which contains a strategy. Strategy is an area of resource focus. In the middle level, you have three or so boxes which contain tactics. In the third level, you have four to six boxes that stand for programs.

A strategy is a main focus, which might be on a specific target market. Tactics are there to implement strategies. Programs are specific business activities, each of which has concrete dates and responsibilities, and probably a budget. Your definitions don't have to be exact.

NOTE: Please refer to Chapter 17, Strategy is Focus, in the main section of the Hurdle book for a more specific example.

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5.2 Value Proposition

Value-based marketing is another conceptual framework. Like the pyramid in the previous topic, it doesn't have to be in your business plan at all, but we add it here because some people find that the framework helps them develop strategy. Obviously, this has to be a quick treatment. There are textbooks written about value-based marketing, and the business literature on this topic is rich and varied.

NOTE: Please refer to Chapter 17, Strategy is Focus, in the main section of the Hurdle book for a more specific example.

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5.3 Competitive Edge

So, what is your competitive edge? How is your company different from all others? In what way does it stand out? Is there a sustainable value there, something that you can maintain and develop over time? For example, a graphic design firm might have its head start in Internet webpage design or its Common Gateway Interface (CGI) programming staff as a competitive edge that puts it ahead of most competitors. An accounting practice might have its well-known senior partner whose books are used as textbooks. A restaurant might have its excellent location or its well-known master chef. The competitive edge might be different for any given company, even between one company and another in the same industry.

NOTE: Please refer to Chapter 17, Strategy is Focus, in the main section of the Hurdle book for a more specific example.

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5.4 Marketing Strategy

This topic introduces marketing strategy. Sales strategy comes later. Your marketing strategy normally involves target market focus, emphasis on certain services or media, or ways to position your company and your products or service uniquely.

Your marketing strategy depends a great deal on which market segments you've chosen as target market groups. You covered this in the previous chapter, the market analysis, but it is also critical to market strategy. Also, if you've been through the previous topics, including the strategy pyramid, the value proposition, and competitive edge, then you probably have marketing strategy on the way. Obviously, you want to make sure to preserve the same basic focus and themes.

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5.4.1 Positioning Statement

Use this topic for your marketing positioning statements. The positioning statements should include a strategic focus on the most important target market, that market's most important market need, how your product meets that need, who is the main competition, and how your product is better than the competition.

Consider this simple template:

For [target market description] who [target market need], [this product] [how it meets the need]. Unlike [key competition], it [most important distinguishing feature].

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35

5.4.2 Pricing Strategy

Provide detail on product pricing and relate your pricing to strategy. Your value proposition, for example, will normally include implications about relative pricing. Therefore, you should check whether your detailed product-by-product pricing matches the implied pricing in the value proposition. Pricing is also supposed to be intimately related to the positioning statement in the previous topic, since pricing is probably the most important factor in product positioning.

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5.4.3 Promotion Strategy

Think of promotion in a broader sense than simply sales promotion. How will you spread the word about your business to your future customers? Think of it in the broader context, including the whole range of advertising, public relations, events, direct mail, seminars, and sales literature.

Think strategically. What, in general, is your strategy about communicating with people? Do you go for expensive ads in mass media, or targeted marketing in specialized publications, or even more targeted with direct mail? Do you have a way to leverage the news media or reviewers? Do you advertise more effectively through public relations events, trade shows, newspaper, or radio? What about telemarketing, the World Wide Web, or even multilevel marketing?

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5.4.4 Distribution Strategy

What is your strategy for distributing your products? Remember, strategy is focus, so think about emphasizing your strengths and protecting your weaknesses. You should also refer to your discussion of distribution patterns in the previous chapter to consider how your strategy fits in with the rest of your industry.

Are you focusing on a specific channel, area of distribution, or means of distribution? Is there some special advantage you have that you want to emphasize to differentiate from your competition? Is there anything unique in your distribution plans that your competitors can't imitate? In what way does your plan for distribution emphasize your strengths and move away from your weaknesses?

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5.4.5 Marketing Programs

Details and specifics are critical to implementation. Use this topic to list the specific information related to marketing programs in your Milestones table (attached to topic 5.7) with the specific persons responsible, deadlines, and budgets.

Each marketing program in your Milestones table should appear in this topic, along with relevant details. You may go over them again in the text related to that table, but for this topic you want to cement your marketing strategy with programs that make it real. How is this strategy to be implemented? Do you have concrete and specific plans? How will implementation be measured?

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5.5 Sales Strategy

Describe sales strategy as it differs from marketing strategy. Sales should close the deals that marketing opens. Sales strategies deal with how and when to close sales prospects, how to compensate salespeople, how to optimize order processing and database management, how to maneuver price, delivery, and conditions. This topic is the summary, to be followed by a detailed sales forecast and a discussion of specific sales programs.

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40

5.5.1 Sales Forecast

Break down your sales -- by product or by service. The best forecasts will list one full year by month, plus two additional years by year.

You also need to project costs of sales, just as you project sales. Usually you'll use the same sales break down for costs as for sales.

Sales Forecast	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	Y1
Sales													
Total													
Cost of Sales													
Total													

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5.5.2 Sales Programs

Details and specifics are important to implementation. Use this topic to list the specific information related to sales programs in your Milestones table, with the persons responsible, deadlines, and budgets.

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5.6 Strategic Alliances

Explain your strategic alliances, such as co-marketing, co-development, commissions and cooperative arrangements. Is your fate tied to that of any other company? Can you link your promotions or distribution strategies to another company or companies? Does this affect your marketing strategy, competitive edge, or positioning?

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5.7 Milestones

The milestones are critical. This is where a business plan becomes a real plan, with measurable activities instead of just a document. Include as many specific programs as possible. For each program, give it a name, a person responsible, a milestone date, and a budget.

Milestone	Manager	Planned Date	Department	Budget

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6.0 Management Summary

As with the other first topics in chapters, this summary may be used to stand for the rest of the chapter as part of a Summary Memo. If you only have one or two paragraphs to include about your personnel and management team, this is it.

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45

6.1 Organi ational Structure

The organizational structure of a company is what you frequently see as an organizational chart (also known as an "org chart"). If you have access to a graphic of an organizational chart (from a drawing program or one of the specialized organizational charting software packages available), then you can include the drawing into your business plan at this point. If not, you may want to include a chart as an illustration in the appendix. You can also just use text to describe the organizational structure in words, without a chart.

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6.2 Management Team

List the most important members of the management team. Include summaries of their backgrounds and experience, using them like brief resumes. Describe their functions with the company.

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6.3 Management Team Gaps

Specify where the team is weak because of gaps in coverage of key management functions. How will these weaknesses be corrected? How will the more important gaps be filled?

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48

6.4 Personnel Plan

Use the Personnel table to project employees, salaries, and departments. A standard plan would list one full year by month, plus two additional years by year. Use the text topic to explain the plan, assumptions, personnel needs, costs, and benefits.

Personnel Plan	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	Y1
Subtotal													
Tax, insurance, etc.													
Total													

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7.0 Financial Plan

This is another summary topic, which is followed by detailed topics covering your General Assumptions, Break-even Analysis, Profit and Loss, Cash Flow, Balance Sheet, and Ratios.

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7.1 Important Assumptions

Discuss your important assumptions about your business. Explain how key assumptions have affected your financial projections. There might be additional assumptions, such as assuming general economic conditions, or that your competition isn't going to release a new product during the next 12 months.

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7.2 Key Financial Indicators

This topic compares five key indicators in regard to how much they change over time. The indicators include sales, gross margin, operating expenses, inventory turnover, and collection days. We chose these five indicators because they all have an impact on the health of a business. We focus not on gross amounts as much as changes.

The indicator value is a good way to compare different concepts. Sales and operating expenses are measured in gross amounts, gross margin is in percentage terms, collection days are in days (how many days do you wait to get the money), and inventory turnover is in turns per year (cost of goods sold divided by average inventory). With sales, gross margin, and inventory turnover, the higher the better. With operating expenses and collection days, the lower the better.

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52

7.3 Break-even Analysis

Collect the data to do a break-even analysis. Determine (or guess) your average monthly fixed costs and revenues. For a product business, record your average unit price and average unit cost. What do you have to sell each month in order for your income to exceed your fixed and product costs?

Use the text area to explain your assumptions, and the significance of the analysis.

Assumptions:

Average Unit Sale	
Average Per-Unit Cost	
Monthly Fixed Cost	

Calculating Fixed Cost

Rent	
Utilities	
Insurance	
Salaries, benefits, etc.	
Other	
Other	
Other	
Total	

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7.4 Projected Profit and Loss

Take a deep breath. You've already collected some of the information you need here, so now you can begin to put it together. Again, the goal is to create a plan showing one full year by month, plus two additional years by year. You roughed out your fixed costs; now you'll list the details. You have already forecasted your sales and product costs. You have your payroll costs. Remember, you will most likely revise these numbers as you complete this plan.

Profit and Loss	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	Y1
Sales													
Cost of sales													
Gross Margin													
Less Operating Expenses													
Salaries and benefits													
Rent & utilities													
Advertising & promotion													
Subtotal													
Gross Profit													
Interest expense													
Taxes													
Net Profit													

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7.5 Projected Cash Flow

Fill in the Cash Flow table. A standard plan would list one full year by month, plus two additional years by year. In most business plans, the cash flow is negative for some months, so the net cash flow row can show negative values. The cash balance, however, must not go below zero ever, because that would be equivalent to a negative balance in the checking accounts, which means bounced checks and bad problems. Normally you will have to borrow money off of a credit line to support your weak months and pay it off during your strong months. You might also be looking for new investment to improve your cash flow, or taking out a long-term loan or selling assets.

Cash Received	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	Y1
Cash Sales													
From Receivables													
From Sale of Inventory													
From Sale of Other Current Assets													
From Sale of Capital Assets													
From New Capital													
New Short-term Loans													
New Long-term Loans													
New Other Liabilities (taxes, etc.)													
Subtotal													
Cash Expenditures	**M1**	**M2**	**M3**	**M4**	**M5**	**M6**	**M7**	**M8**	**M9**	**M10**	**M11**	**M12**	**Y1**
Pay Accounts Payable													
Payroll and Payroll Burden													
Cash Payments													
Inventory Paid in Cash													
Principle Payments Short-term Debt													
Principle Payments Other Liabilities													
Principle Payments Long-term Debt													
Purchase of Short-term Assets													
Purchase of Capital Assets													
Payments of Dividends or Draw													
Subtotal													
Net Cash Flow													
Cash Balance													

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7.7 Business Ratios

Here is a sample of a Business Ratios table.

Profitability Ratios:	Y1	Y2	Y3
Gross Margin			
Net Profit Margin			
Return on Assets			
Return on Equity			
Activity Ratios:			
AR Turnover			
Collection Days			
Inventory Turnover			
Accts Payable Turnover			
Total Asset Turnover			
Debt Ratios:			
Debt to Net Worth			
Short-term Liab. To Liab.			
Liquidity Ratios:			
Current Ratio			
Quick Ratio			
Net Working Capital			
Interest Coverage			
Additional Ratios:			
Assets to Sales			
Debt/Assets			
Current Debt/Total Assets			
Acid Test			
Asset Turnover			
Sales/Net Worth			
Dividend Payout			

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65

2

FINANCIAL ANALYSIS

Financial Analysis

For Agribusiness Marketers

Computerized Systems
& Agribusiness Applications

Basic Concepts

Table of Contents

Preface

Chapter 1 - Introduction to accounting for marketers

Chapter objectives
Structure of the chapter
The marketing financial analysis circle
Activities associated with marketing financial analysis functions
Methods involved in marketing financial analysis
What is analysed in marketing financial analysis
Basic financial analysis methods
Other performance measures
Budgeting and forecasting
Key terms

Chapter 2 - Financial, managerial accounting and reporting

Chapter objectives
Structure of the chapter
The basic principles
Use of the accounting equation to find profit
Manufacturing account
Trading account
The profit and loss account
The balance sheet
Stocks and work-in-progress
The interpretation of company accounts-ratio analysis
The main types of ratio
Other useful ratios
Financial measures of business unit performance
Key terms

Chapter 3 - Cash flow accounting

Chapter objectives
Structure of the chapter
Aim of a cash flow statement
Statements of source and application of funds
Funds use and credit planning
Key terms

Chapter 4 - Budgetary control

Chapter objectives
Structure of the chapter
Budgetary control methods
Management action and cost control
Zero base budgeting (ZBB)
Key terms

Chapter 5 - Information for decision making

Chapter objectives
Structure of the chapter
Elements of a decision
Relevant costs for decision making
Opportunity cost
Shutdown problems
Key terms

Chapter 6 - Investment decisions - Capital budgeting

Chapter objectives
Structure of the chapter
Capital budgeting versus current expenditures
The classification of investment projects
The economic evaluation of investment proposals
Net present value vs internal rate of return
Allowing for inflation
Key terms

Chapter 7 - Sources of finance

Chapter objectives
Structure of the chapter
Sources of funds
Ordinary (equity) shares
Loan stock
Retained earnings
Bank lending
Leasing
Hire purchase
Government assistance
Venture capital
Franchising
Key terms

Appendix

Preface

Approach and objectives

This book is written in a style intended to provide basic, practical knowledge and techniques for marketers, untrained in the discipline of finance and accounting. It is not intended to give an all embracing discussion on the intricacies of the principles of accounting and finance but to provide sufficient knowledge for the marketer to be aware of the financial implications of decision making, and aid in the following activities of marketing:

- an assessment of how well marketing strategy is working,
- an evaluation of alternative marketing activities,
- the development of future marketing plans, and
- controlling marketing activities.

The text is kept to a minimum in order to put over the principles in a concise way, but it includes both numerous worked and un-worked examples in order to achieve maximum understanding and reinforcement.

The text is primarily designed as a teaching aid for marketing or agribusiness lecturers or trainers and is aimed at undergraduate or diploma students studying agricultural marketing, agricultural economics, agribusiness, management or business studies and certain professional qualifications. It can also be used as material for short courses, as a refresher or basic text for postgraduates, for in service training of managers and as a self-learning aid.

The learning process

The learning process is assisted within the text through the provision of a number of learning aids. These are:

- Chapter objectives; Each chapter has specific objectives which prepare the learner for the chapter material and outline the learning outcomes.
- Figures and tables; Each chapter is illustrated with relevant figures and tables which illustrate, encapsulate or summarize the text.
- Examples; Each chapter contains examples which serve to illustrate the text and reinforce understanding of the principles.
- Exercises; Each chapter contains both worked and un-worked exercises intended to ensure the learner's understanding of both the concepts and the use of practical techniques involved in financial analysis.
- Key terms; Key terms are included at the end of each chapter and are intended to act as an aide-memoire.
- Index; A subject index is included at the end of the text to assist with quick reference.

Chapter 1 - Introduction to accounting for marketers

Chapter objectives

This chapter is intended to provide:

- An understanding of financial analysis in marketing
- An explanation of the various activities associated with marketing financial analysis
- A brief introduction to the various financial analysis methods.

Whilst it is not necessary to be a qualified accountant or bookkeeper, a basic understanding of what is involved in financial analysis is essential for anyone in marketing. It is too enticing, and often too easy, to use "blue skies" thinking in planning marketing activities. It is even easier to spend money without fully realizing the return one is getting for it. It is proven, therefore, on marketers, to be more disciplined and analytical in the way they go about planning, executing and evaluating marketing plans and strategy. One way of introducing more discipline into the process is by having a basic understanding of the financial implications of decision making, and how financial measures can be used to monitor and control marketing operations. The purpose of this text is to provide exactly that, and the first chapter deals basically with an introduction to the activities involved in financial analysis.

Structure of the chapter

The chapter introduces the way in which financial analysis can be used in marketing, and gives a brief overview of the areas in marketing where a knowledge of finance can be very useful, particularly in helping marketers gauge how well strategy is working, in evaluating marketing research alternatives, developing future plans and in marketing control.

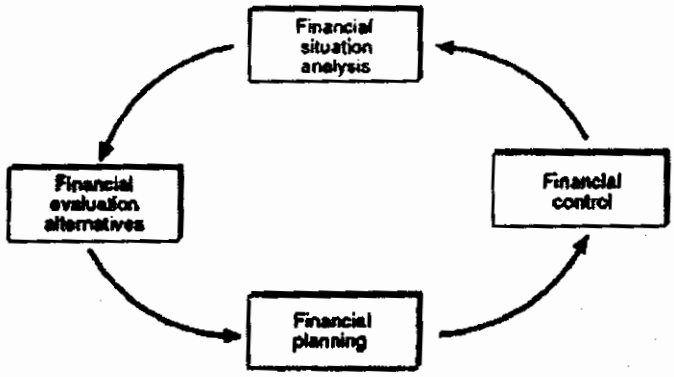
The marketing financial analysis circle

Financial analysis can be used to serve many purposes in an organization but in the area of marketing it has four main functions:

a) to gauge how well marketing strategy is working (situation analysis)
b) to evaluate marketing decision alternatives
c) to develop plans for the future
d) to control activities on a short term or-day to-day basis.

In effect these four functions comprise what can be called the "Marketing Financial Analysis Circle" (see figure 1.1)

Figure 1.1 The marketing-financial analysis circle



Activities associated with marketing financial analysis functions

For each of the four functional areas where financial analysis is useful in marketing, there are a number of associated activities:

a) Financial situation analysis (how well marketing strategy is working)
This involves the study of:

- the study of trends
- comparative analysis
- assessment of present financial strengths and limitations for the whole business, brand or component of the business, e.g. transportation.

b) Financial evaluation of alternatives

This involves the study of a number of factors like the market place, competitors etc., and is used for decisions whether to:

- introduce new products/delete mature products
- expand the sales force or do more advertising
- delete a market operation e.g. close a Dairy Board depot or increase the sales fleet
- move into a new market or markets
- build a new grain depot or silo.

c) Financial planning (projections concerning activities which marketing management has decided to undertake)

Financial planning is used for a number of activities like:

- the introduction of a new range of products
- the forecasting of sales and costs
- market liberalization.

d) Financial control (actual compared to planned results)

This activity is mainly centered around keeping plans on course.

Methods involved in marketing financial analysis

There are a variety of methods used in each of the four functional areas. Some of these include the following:

a) Financial situation analysis

- Ratio analysis
- Profit and contribution analysis
- Sales and cost analysis.

b) Financial evaluation of alternatives

- Sales and costs analysis
- Break even analysis
- Profit contribution, cash flow analysis, profit projections
- Return on investment
- Return on capital employed
- Sustainable growth rates.

c) Financial planning

- Sales and costs forecasts
- Budgets
- Proforma income statements.

d) Financial control

- Sales and costs forecasts
- Actual results compared to budgets (analysis of variance)
- Profit performance.

What is analyzed in marketing financial analysis

Two factors influence the choice of unit of analysis:

a) the purpose of the analysis
b) the cost of the information needed to perform the analysis.

Several possible units can be used in marketing financial analysis and cost or sales data can be used. These units are listed in table 1.1. which is by no means exhaustive. Units can be chosen which suit the particular situation or organisation.

Table 1.1 - Alternative units in financial analysis

Market	Product/service	Organization
Total Market	Industry	Company
Market segment (s)	Product mix	Segment/Division/Unit
Geographical areas	Product line	Marketing department
- demographics	Specific product	Sales unit
- product	- brand	Regions
- characteristics	- model	District/Branch
	- size	Office/Store
	- shape	Sales person

Basic financial analysis methods

These will be expanded on in later chapters, so this section serves as an introduction only.

Use of ratios

Ratios can be used to judge the organization's "liquidity", i.e. can it pay its bills, its "leverage", i.e. how is it financed and its "activities", i.e. the productivity and efficiency of the organization. Taking liquidity analysis only, this has a bearing on new product planning, marketing budgets and the marketing decisions. Liquidity analysis is drawn from the balance sheet, e.g.:

	$		$
Cash	250	Current	120
Accounts receivable	300	Short term debt	100
Stock	200	Long term debt	1,500
Total current assets	750	Total liabilities	1,720
Property and equipment	2,000	Net worth	1,430
Other assets	400		
Total assets	3,150	Total liabilities and net worth	3,150

Current and quick ratios

These are used to judge a firm's short term capacity to meet its financial responsibilities.

(i) Current ratio

$$\frac{\textit{Current asset}}{\textit{Current liabilities}} \text{ (Should be greater than 1)}$$

750/220=3.41

ii) Quick ratio

$$\frac{\textit{Current asset}}{\textit{Current liabilities}} \text{ (minus stock)}$$

550/220=2.50

Debt ratios

These are used to measure long term liquidity

$$\frac{\textit{Total debts}}{\textit{Net worth}}$$ (Current Liability+Short Term Debt+Long Term debt) should be >1

1,720/1,430=1.21

$$\frac{\textit{Long term debt}}{\textit{Total capitalisation}}$$ (Long Term Debt + Net Worth)

1,500/2,930=0.51

This ratio shows the extent of leverage (debt) in total capitalization.

Profit analysis

Breakeven analysis is a method used to estimate the number of units (volume) or sales value required to make neither profit nor losses. In other words, it is the point where costs of production and sales volume are equal.

Sales and cost information are used to calculate the breakeven point. Without getting into the argument as to what constitutes fixed or variable costs, fixed costs are defined as those which do not vary with output e.g. rent, rates, whereas variable costs do vary with increased or decreased output, e.g. labour, materials. Breakeven assumes fixed costs are constant, variable costs vary at a constant rate and there is only one selling price. However, with a higher or lower price, the breakeven point will be lower or higher respectively. Breakeven is calculated by the formula:

$$\text{BREAKEVEN} = \frac{\textit{FIXED COSTS}}{\textit{PRICE / UNIT} - \textit{VARIABLE COST / UNIT}}$$

By rearranging the formula breakeven costs or sales can be calculated. Note that profit level intentions should be added to the fixed costs, as this is a "charge" to the company. Also, if one wishes to recover all new investment (value) *immediately* it should be added to fixed cost.

Breakeven can be calculated by the formula or by graphical methods. Figure 1 2 shows an example of both.

Figure 1.2 Formula and graphical solution for breakeven analysis

i) Formula

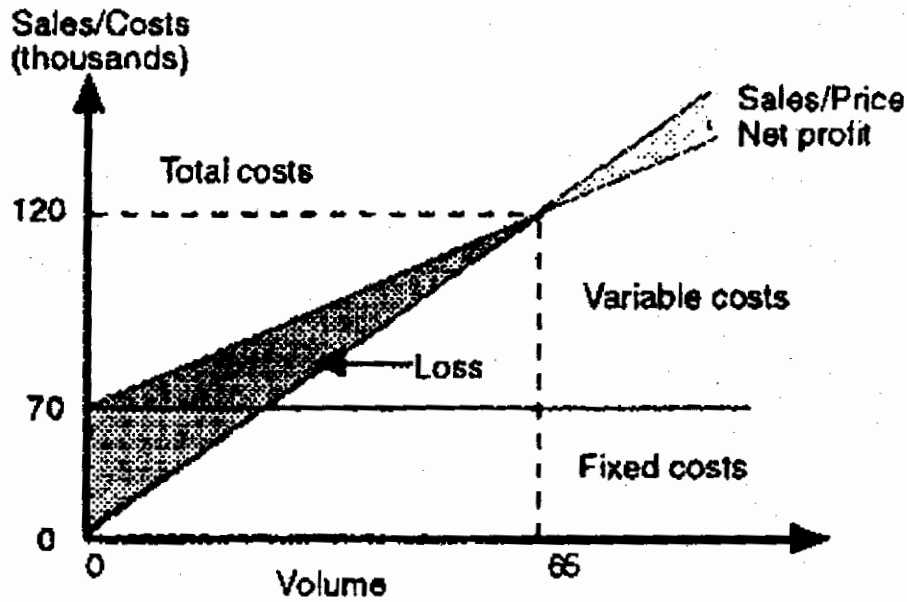
Price/Unit =	$ 1.846
Variable cost/Unit =	$ 0.767
Fixed costs =	$70.000

$$Breakeven = \frac{Fixed\ costs}{Price\ per\ unit - Variable\ cost\ per\ unit}$$

$$= \frac{70{,}000}{1.846 - 0.767}$$

= 65, 000 units (volume) or $120, 000

Figure 1.2 Graphical solution



Contribution analysis: When performance of products, market segments and other marketing units is being analyzed, an examination of the profit contribution generated by a unit is often very useful to management.

CONTRIBUTION = *SALES (REVENUE) - VARIABLE COSTS*

So, contribution represents the amount of money available to cover fixed costs and the excess available is net income.

For example, suppose a product is generating a positive contribution margin. If the product is dropped, the remaining products would have to cover fixed costs that are not directly traceable to it.

In the example below if X was eliminated, $50, 000 of product net income would be lost. If the product was retained the $50, 000 could be used to contribute to other fixed costs and/or net income (see figure 1.3.).

Gross and net profit margins: Contribution margin is useful for examining the financial performance of products, market segments and other marketing, planning and control units. However, marketing executives should be familiar with the calculation of gross and net profit margins, which is useful to gauge company and business unit financial performance and to budget for future operations. The profit

and loss statement is useful for reporting performance to stockholders and to compute taxes. Figure 1.4 gives an example

Figure 1.3 Illustrative contribution margin for product X (000's)

		$
SALES		500
LESS:	Variable manufacturing costs	200
	Other variable costs traceable to product X	100
EQUALS:	Contribution margin	200
LESS:	Fixed cost traceable to product X	150
EQUALS:	Product's net income	50

Note: *Chapter 5 provides further explanations of a) and b).*

Figure 1.4 Illustrative profit and loss statement

		$
SALES REVENUE		1,200.000
LESS	Cost of goods sold	800.000
EQUALS:	Gross profit margin	400,000
LESS:	Selling and admin. expenses	200.000
EQUALS:	Net profit before tax	200,000
LESS:	Tax	80.000
EQUALS:	Net profit	120.000

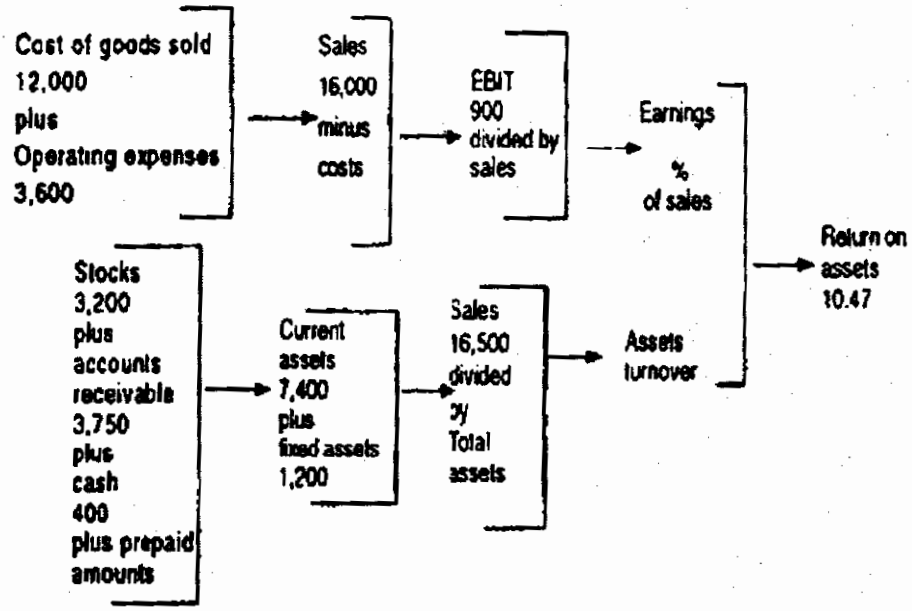
Consider the following sample data taken from *Rowe, Mason, Dickel and Westcott (1987)*

	$
Cost of goods sold	12,000
Operating expenses	3,600
Sales	16,500
Stocks	3,200
Accounts receivable	3,750
Cash	400
Prepaid expenses	50
Fixed assets	1,200

Financial analysis models

Many models, often computerized, have been developed to aid marketers see the effects on the "bottom line" of a change in an organization. One such programme is the Dupont Analysis The model allows executives to input data into blank boxes and by manipulating any figure find the resulting outcome. One of the advantages of computer based models is that one can work "backward" or "forward" through the model, setting desired levels of cost or outcomes and calculating the results.

Figure 1.5 Sample printout of the Dupont analysis



Other performance measures

Various other performance measures can be used; these include productivity measures, which, say, for a supermarket would be:

$$\frac{\textit{Sales}}{\textit{Sq metre of space}}$$

Other measures include inventory turnover:

$$\frac{\textit{Net Sales}}{\textit{Inventory}}$$

Budgeting and forecasting

These two activities are essential to marketing planning and are often done via pro forma statements.

a) Marketing budgets

Field sales expense, advertising expense, product development expense, market research expense, distribution expense (trade and administration) promotion expense (trade, consumer).

b) Pro forma financial statement

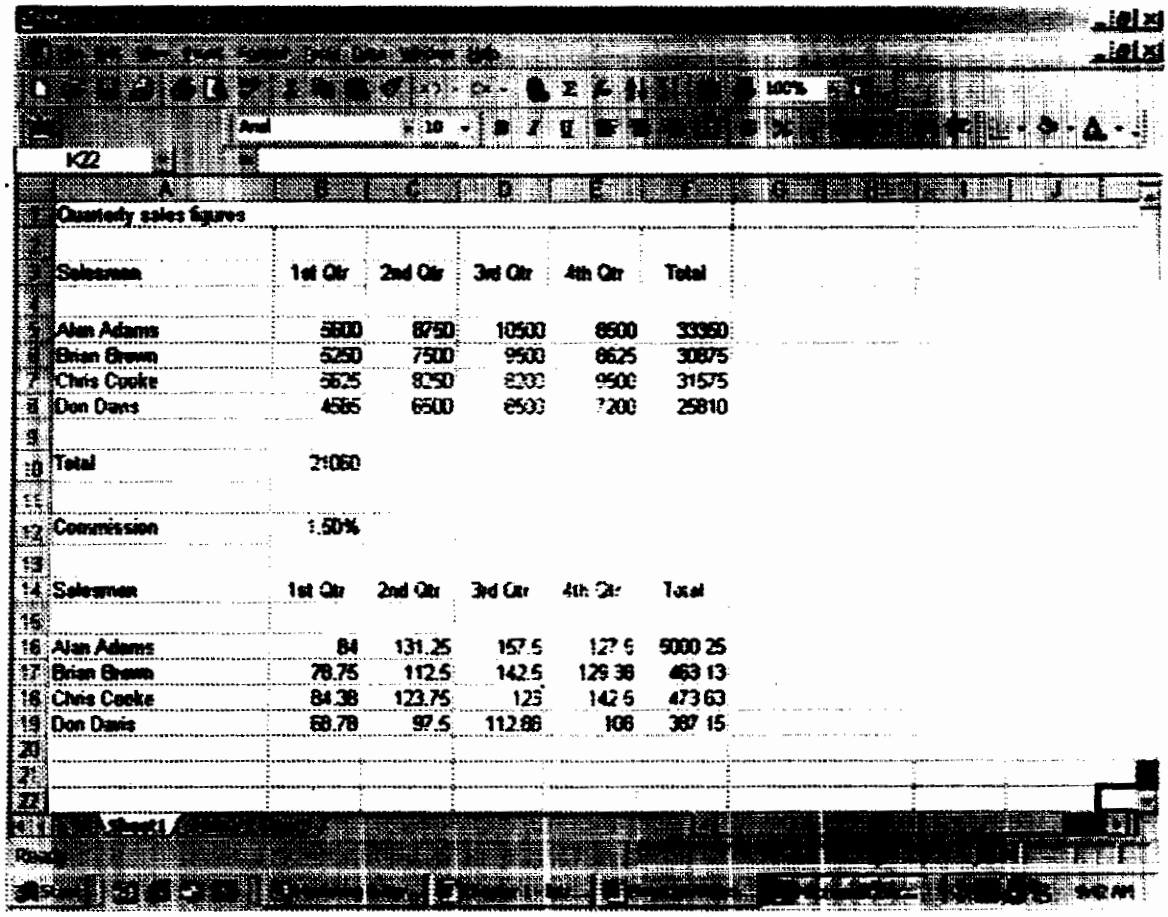
Annual profit and loss statement, next year pro forma/quarter, current year budget/quarter, last year actual/quarter, annual revision of 5 year pro forma profit and loss statement (expense detail for broad categories).

N.B. In all figures watch for inflation and information gaps (use approximation).

Spreadsheets

Spreadsheets are often used in budgeting and forecasting exercises. Spreadsheets use the memory of a computer as if it were a large piece of paper divided up into a matrix of cells. Into these cells may be entered numbers, text and formulae. The power of these systems is that the data held in any one cell can be made dependent on that held in other cells and changing a value in one cell can set (if wanted) a chain reaction of changes through other related cells. This means that a model can be built in which the effect of changing key parameters may be observed. A term often used to describe spreadsheets is "what if software". It can be used, for example to evaluate the effect of changing the sales commission rate. Simply entering a new value in the commission rate cell will lead to the automatic re-calculation of all dependent cells. Figure 1.6 shows an example of a spreadsheet used in accounting.

Figure 1.6 Sample spreadsheet



Quarterly sales figures

Salesman	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total
Alan Adams	5600	6750	10500	8500	33350
Brian Brown	5250	7500	9500	8625	30875
Chris Cooke	5625	8250	8200	9500	31575
Don Davis	4585	6500	6500	7200	25810
Total	21060				
Commission	1.50%				
Salesman	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total
Alan Adams	84	131.25	157.5	127.5	5000.25
Brian Brown	78.75	112.5	142.5	129.38	463.13
Chris Cooke	84.38	123.75	125	142.5	473.63
Don Davis	68.78	97.5	112.88	108	387.15

Note: The formatting of the 'cells' to display numerical fields to two decimal places/values for commission in the lower half are found by multiplying the sales figures by 1.5%; totals are stored as the SUM (column or row); the borders showing column letters and row numbers may be omitted.

Spreadsheets are powerful personal decision support tools. In addition, programming facilities such as IF...THEN...ELSE greatly extend the control that may be built into the model.

Chapter 2 - Financial, managerial accounting and reporting

Chapter objectives

This chapter is intended to provide:

- An introduction to the basic principles of the accounting equation
- An introduction to, and the construction of, manufacturing, trading and profit and loss accounts and their use
- An understanding of the principles and construction of a balance sheet and its interpretation
- A detailed explanation of the interpretation of company accounts using ratio analyses and the uses of these

The two principle statements which form a set of accounts are:-

a) *The profit and toss account* defined as a summary of a business's transactions for a given period.
b) *The balance sheet* defined as a statement of the financial position of the business at a given date (usually the end of that period).

Other less important statements are the *manufacturing account* and the *trading account*. It is absolutely essential to any marketer to understand what the profit and loss statement and balance sheet mean. Both documents are vital, not only to show the corporate health of the organization, but also as an indication to various shareholders of how well or badly the organization is performing, as proof to potential investors or lenders for the raising of capital and as a statutory record for taxation and other purposes.

Structure of the chapter

This chapter is structured in a logical way, building up from the basic tenets of financial analysis - the dual effect and the accounting equation. From this, the chapter looks at the construction of manufacturing, trading and profit and loss accounts and the drawing up of a balance sheet. Ratio analysis is a particularly powerful technique aimed at helping marketers to compare sets of figures over time and between companies. This is dealt with in considerable detail.

The basic principles

All aspects of accounts are governed by these two principles.

a) First principle: Dual effect

Every transaction has two effects, not one, e.g. if a Cerial Marketing Board (C.M.B.) purchases grain it has:

- more stock
- less cash.

If the Nile Company of Egypt sells frozen artichokes to a retailer, it has

- less stock
- an amount owed by the customer if he does not pay immediately

b) Second principle: The accounting equation

The second principle stems from the first. Every transaction has two effects; these two are equal and balance each other. Thus, at any given moment the net assets of a business are equal to the funds which the owner or proprietor has invested in the business.

Net Assets = Proprietor's funds

is the ultimate accounting equation. An explanation of the terms is as follows;

- *Net assets* are defined as a business's total assets less total liabilities.
- An *asset* is defined as something owned by a business, available for use in the business.
- A *liability* is defined as the amount owed by the business, i e an obligation to pay money at a future date.
- *Proprietor's funds* represents the total amount which the business owes to its owner or proprietor. This consists of:

Capital: (amount proprietor invested in the business)
plus
Profits: (funds generated by the business)
or minus
Losses: (funds lost by the business) *minus*
Drawings: (amounts taken out of the business).

Use of the accounting equation to find profit

We normally arrive at a business's profit or loss by means of a profit and loss account, but where information about income and expenditure is lacking, the accounting equation can be a useful way of finding profit. If:

Net assets = Proprietor's funds

then an *increase in net assets = an increase in a proprietor's funds.*

Considering what causes an increase in the proprietor's funds, we can say that INCREASE IN NET ASSETS (from the beginning of a period to the end) is equal to

New capital introduced + Profit - Drawings

during the same period. If three of these four amounts are known, the fourth can be calculated.

Manufacturing account

There are many firms, whether parastatal, sole trader, partnership or limited company, which manufacture the final product to be sold from raw materials, e.g. a fertilizer company uses phosphates, ammonia and so on to produce finished fertilizer pellets.

In this instance, a manufacturing account is required in order to arrive at the final cost of manufacture. The manufacturing organization will still need a trading and profit and loss account. The only major difference is that, in the trading account, the entry for purchases is replaced by the cost of manufacture. The cost of manufacture is calculated using a manufacturing account. Two important factors need to be taken into account:

a) **Different types of cost**

The costs needed to prepare a manufacturing account can be broken down into two main categories known as direct and indirect costs.

The main or direct costs are those of raw materials and labor, which together are known as the prime cost, although any expense which can be traced directly to any unit of production is also a direct cost. The indirect costs are those associated with production but cannot be traced directly to a particular production unit. These costs will include the general factory overheads such as light, heat and power, rent, rates, insurance, depreciation of production machinery, etc. Certain labour costs, such as supervision by foremen or factory managers, will also be indirect costs because they are not directly traceable to a production unit but are absorbed as a general overhead.

b) **The effect of stocks**

One complication in constructing the manufacturing account is to remember that there may be opening and closing stocks of raw materials and opening and closing values to attach to partly completed items (work in progress).

Figure 2.1 Pro forma manufacturing account

YEAR ENDED 2001			
Opening stock of raw materials			:Production cost o completed goods carrie down to trading account
Purchases		:	
		x	xx
Less closing stock of raw materials		:	
Cost of raw materials consumed		:	
Direct manufacturing wages		:	
Prime cost		x	
Factory overheads:			
Rent and rates,	x		
light, heat and power	x		
Indirect wages	x		
Depreciation of Prod. machinery	x		
		x	
		x	
Opening work in progress		:	
		xx	
Less closing work in progress		:	
		xx	xx

Now attempt exercise 2.1 and 2.2.

These adjustments can be seen in the pro forma manufacturing account, which follows. (See figure 2.1.)

Exercise 2.1 A simple manufacturing account

The following are details of production costs of *Aroma Pvt Ltd* for the year ended 31 December 2001.

	:
1 January 2001, stock of raw materials	1.30
31 December 19X5, stock of raw materials	1.80
Purchase of raw materials	10 00
Manufacturing (direct) wages	17 00
Royalties	60
Indirect wages	9 00
Rent of factory (excluding administration and selling and distribution departments;	2.08
Factory rates	64
General indirect expenses	68
Depreciation of work machinery	1,05

Prepare a manufacturing account for the year ended 31 December 19X5.

Exercise 2.2 A manufacturing account with an adjustment of work-in-progress.

January 2001 stock of raw materials	1 50(
31 December 2001 stock of raw materials	2 75(
1 January 2002 work in progress	86(
31 December 2002 work in progress	94(
For the year ended 31 December 19X4	
Wages: direct	6,45(
indirect	4,06(
Raw materials purchased	15,70(
Power fuel	1,02(
Direct expenses	66(
Carriage inwards on raw materials	1,05(
Depreciation of factory machinery	72(
Insurance of factory buildings	34(
General factory expenses	70(

Trading account

The purpose of the trading account is to show the gross profit on the sale of goods. Gross profit is the difference between the sale proceeds of goods and what those goods cost the seller to buy, or cost of sales. The cost of sales for this purpose includes the amount which has been debited for them to the purchases account plus the cost of getting them to the place of sale, which is usually the seller's premises, i.e. the carriage inwards of those goods.

Preparing a trading account

The trading account is calculated by using a sequence of steps. It is essential that these steps are carried out in the order indicated.

a) The first step is to transfer the balance on the sales account to the trading account:

Dr: Sales A/c	Cr: Trading A/c.

b) Next, debit the trading account with the cost of goods sold, starting with the opening stock:

Dr: Trading A/c	Cr: Stock A/c.

The opening stock is obviously the same as the closing stock of the previous period; in the first year of trading, of course, there will be no opening stock.

c) The balance on the purchases account is then transferred to the trading account and added to the opening stock figure:

Dr: Trading A/c	Cr: Purchases A/c.

d) Transfer any balance on the carriage inwards account to the trading account:

Dr: Trading A/c	Cr: Carriage Inwards A/c.

Add the carriage to the total arrived at in c) above. This gives the total cost of goods available for sale.

e) Deduct the value of closing stock from the cost of goods available for sale. Any item deducted from the debit side of an account is, in effect, credited to the account. Deducting closing stock from the debit side of the trading account is therefore crediting it to that account. The corresponding double entry will therefore be to the debit of stock account:

Dr: Stock A/c	Cr: Trading A/c

(by deduction from the debit side).

We have now arrived at the cost of sales.

f) The balance on the trading account will be the difference between sales and cost of sales, i.e. gross profit, which is carried down to the profit and loss account.

Point to Note:

The debit to stock account for closing stock is the value of the current asset of closing stock which will be included in the balance sheet, as we shall see later. When the opening stock is credited to the stock account in the next period, it will balance off the stock account.

Net sales (turnover) and net purchases: Goods which have been returned by customers are represented by a debit balance on the sales return account. This must be transferred to the trading account, otherwise the sales and gross profit in that account will both be overstated.

Following the same reasoning that allows us to deduct closing stock on the debit side of the trading account, we may deduct the debit balance on the sales returns account from the sales credited in the trading account. In this way, we show the net sales for the year. Net sales are known as turnover. Similarly, we show the credit balance on the purchases returns account as a deduction from purchases in the trading account to show the net cost of purchases. Goods which have been returned to suppliers must not be included in the cost of sales.

Point to Note:

The order of items is most important. Sales returns must be deducted from sales; purchases returns must be deducted from purchases; carriage inwards, if any, must be debited in the account before closing stock is deducted. Figure 2.2 shows a pro forma trading account.

Figure 2.2 Pro forma trading account

Opening stock of finished goods		:Sales	xx.
Production cost of completed goods b/d (from manufacturing account)	:		
Closing stock of finished goods	x:		
Cost of sales	x:		
Gross profit c/d	x:		
	x:		xx:
		Gross profit B/d	xx:

N.B. A trading account is prepared very much like a manufacturing account but substituting the production cost of completed goods for the usual purchasing figure (see exercise 2.3: Preparation of trading account)

Appendix I shows a sample trading account for The Nile Marketing Board, Zimbabwe.

Now attempt exercise 2.3.

Exercise 2.3 Preparation of trading account

Prepare a trading account from the following balances included in the trial balance of *K Smith* at 31 December 2001.

	Dr	Cr
	:	:
Sales		25,00
Purchases	16,00	
Sales returns	3,00	
Purchases returns		2,50
Stock at 1.1.19X8	3,00	
Carriage inwards	1,00	
Stock at 31/12/19X8	5,00	

The profit and loss account

Introduction: The remaining nominal accounts in the ledger represent non-trading income, gains and profits of the business in the case of credit balances, e.g. rent, discount and interest receivable. Debit balances represent expenses and losses of the business and are known as overheads, e.g. salaries and wages, rent and rates payable, lighting, heating, cleaning and sundry office expenses. These must now be transferred to the profit and loss account so that we can calculate the net profit of the business from all its activities.

The profit and loss (income) statement presents a summary of the revenues and costs for an organisation over a specific period of time. Such a statement is generally developed on a monthly, quarterly and yearly basis. The profit and loss statement enables a marketer to examine overall and specific revenues and costs over similar time periods and analyses the organisation's profitability. Monthly and quarterly statements enable the firm to monitor progress towards goals and revise performance standards if necessary.

When examining a profit and loss statement, it is important to recognise one difference between manufacturers and retailers. For manufacturers the cost of goods sold involves the cost of manufacturing products (raw materials, labour and overheads). For retailers, the cost of goods sold involves the cost of merchandise purchased for resale (purchase price plus freight charges).

The balance sheet shows that the profit for an accounting period increases propnetor's funds. The trading and profit and loss account shows, in detail, how that profit or loss has arisen. The profit and loss statement consists of these major components -

- **Gross sales** - the total resources generated by the firm's products and services
- **Net sales** - the revenues received by the firm after subtracting returns and discounts (such as trade, quantity, cash)
- **Cost of goods sold** - the cost of merchandise sold by the manufacturer or retailer.
- **Gross margin** (profit) - the difference between sales and the cost of goods sold: consists of operating expenses plus net profits
- **Operating expenses** - the costs of running a business, including marketing
- **Net profit before taxes** - the profit earned after all costs have been deducted

Figure 2.3 shows a pro forma trading and profit and loss account

Figure 2.3 Trading, profit and loss a/c for the year ended 31 Dec 19X0

	$	$	$
Sales			x
Less: cost of goods sold stock, at a cost on 1 January ('opening stock')		x	
Add: purchases of goods		x	
Less: stock, at a cost on 31 Dec ('closing stock')		(x)	
			x
Gross profit			xx
Sundry income:			
Discounts received	x		
Commission received	x		
Rent received	x		
	x		
	xx		
Less: administration expenses			
Rent	x		
Rates	x		
Lighting and heating	x		
Telephone	x		
Postage	x		
Insurance	x		
Stationery	x		
Office salaries	x		
Depreciation	x		
Accounting and audit fees	x		
Bank charges and interest	x		
Doubtful debts	x		
Distribution costs:		x	
Delivery costs	x		
Van running expenses	x		
Advertising	x		
Discount allowed	x		
		x	
			(x)
NET PROFIT			xxx

Explanations

It is essential that the difference between a trading and profit and loss account is clearly understood. The following provides an explanation.

- The trading account shows the gross profit generated by the business. This is done by comparing sales to the costs which generated those sales. A retailer, for example, will purchase various items from various suppliers, and add a profit margin. This will give him the selling price of the goods and this, minus the cost of goods sold, will be the gross profit.

Cost of goods sold is calculated by:

Opening Stock + Opening Purchases (for year or period) - **Closing Stock** (cost of goods unsold at the end of the same period).

This gives the cost of goods which were sold. Sales and cost of goods sold should relate to the same number of units.

- The profit and loss account shows items of income or expenditure which although earned or expended by the business are incidental to it and not part of the actual manufacturing, buying or selling of goods.

- In a complicated manufacturing industry and in service industries, different definitions of "goods", "net profit" and "cost of sales" may exist.

Capital and revenue expenditure

Only revenue expenditure (e.g. heating bills) is charged to the profit and loss account; capital expenditure (e.g. the purchase of a new plant) is not.

a) Revenue expenditure is expended on:

- acquiring assets for conversion into cash (resale goods)
- manufacturing, selling and distribution of goods and day-to-day administration of the business
- maintenance of fixed assets (e.g. repairs);

It is well to note that "cash" need not be paid or received to be accounted for The amount of revenue expenditure charged against the profits for the year or period is the amount incurred whether cash has or has not been paid. This applies with sales as well. Even if cash for sales has not been received in the year or period under review, sales will be included in the trading account. This is the "accruals" concept.

b) Capital expenditure is expended on:

- start up of the business
- acquisition of fixed assets (not for resale)
- alterations or improvements of assets to improve their revenue earning capacity.

Capital expenditure is not charged to the profit and loss account as the benefits are spread over a considerable period of time.

Now attempt exercise 2.4.

Exercise 2.4 Trading and profit and loss account

Nigel Munyati and his friends opened a small scale horticultural "co-operative" in Concession, growing and retailing. The business started on 1 August 19X6.

The following is a summary of the transactions for the first year:

Capital introduced on 1 August 19X6	
- cash	20,00
- stocks	12,00
Cash paid to suppliers	28,00
Amounts owed to suppliers at 3 July 19X7	14,00
Received from customers in respect of sales	50,00
Amounts owed by customers at 31 July 19X7	10,00
Stock of goods at the end of the year	11,00
Rent	2,50
Rates	80
Water and light	50
Salesmen's salaries	4,00
Salesmen's commissions, not yet paid	60
Bank charges	12
Office wages	40
Telephone and postal charges	15
Advertising	1,00
Drawings during the year	4,00

You are required to prepare a trading and profit and loss account for the year ended 31 July 2001.

The balance sheet

Introduction: The balance sheet is a statement of the financial position of a business at a given date. It is, therefore, only a "snapshot" in time. When comparing business performance, therefore, a number of years and time periods may be more suitable. The balance sheet is the accounting equation but set out in a vertical form in order to be more readily, understood i.e. the accounting equation.

Assets - Liabilities = Capital + Profit - Drawings

expressed in the form of a balance sheet is as follows:-

	$
Assets	X
Less: liabilities	X
Net assets	X
Representing:	
Capital	X
Profit for the year	X
	X
Less: drawings	X
Proprietor's funds	X

This is a simplified form; in reality the assets and liabilities will be further sub-divided and analyzed to give more detailed information. Figure 2.4 shows a pro forma balance sheet.

Figure 2.4 Pro forma balance sheet

Balance sheet at 31 December 19X0

		C Cost	D Depreciation	Net value (C-D)
		$	$	$
A)	Fixed assets			
	Freehold factory	x	x	x
	Machinery	x	x	x
	Motor vehicles	x	x	x
		x	x	x
B)	Current assets			
	Stocks and work in progress		x	
	Debtors and prepayments		x	
	Cash at bank		x	
	Cash in hand		x	
			x	
C)	Current liabilities			
	Trade creditors	(x)		
	Accrued charges	(x)		
			(x)	
				x
D)	Net current assets			xx
E)	15% loan			(x)
				xxx
F)	Representing:			
	Capital at 1 January			x
	Profit for the year			x
				x
	Less: drawings			(x)
G)	Proprietor's fund			xxx

Explanations

As with trading and profit and loss accounts, the balance sheet has its own nomenclature. These are fixed accounts, current accounts, current liabilities and funds

A) **Fixed assets**: assets acquired for use within the business with a view to earning profits, but not for resale. They are normally valued at cost less accumulated depreciation.

B) **Current assets**: assets acquired for conversion into cash in the ordinary course of business; they should not be valued at a figure greater than their net realisable value.

C) **Current liabilities**: amounts owed by the business, payable within one year.

D) **Net current assets**: funds of the business available for day-to-day transactions. This can also be called working capital.

E) **Loans**: funds provided for the business on a medium to long term basis by an individual or organisation other than the proprietor.

F) This total is the total of the business's net assets.

G) This total is the total of proprietor's funds, i.e. the extent of his investment in the business. Within these main headings the following items should be noted.

- **Fixed assets**

Depreciation is an amount charged in the accounts to write off the cost of an asset over its useful life.

- **Current assets**

Debtors are people who owe amounts to the business.

Prepayments are items paid before the balance sheet date but relating to a subsequent period.

- **Current liabilities**

Trade creditors are those suppliers to whom the business owes money

Accrued charges are amounts owed by the business, but not yet paid for other expenses at the date of the balance sheet.

Note:
Working capital. This is a term given to net current assets, or total current assets less total current liabilities, e.g.

	$
Current assets	7,600
Less current liabilities	1.800
Working capital	5,800

Working capital is important because it is the fund of ready resources that a business has in excess of the amount required to pay its current liabilities as they fall due. Working capital is important; lack of it leads to business failure.

Appendix i shows a sample balance sheet and a full set of accounts for The Nile Marketing Board of Zimbabwe.

Now attempt exercise 2.5.

Exercise 2.5 Balance sheet

Prepare a balance sheet for year ended 31 July 19X7 for *Nigel Munyati's* horticultural co-operative.

Capital introduced on 1 August 19X6	
- cash	20 00
- stocks	12 00
Cash paid to supplier	28 00
Amounts owed to suppliers at 31 July 19X7	14 00
Received from customers in respect of sales	50 00
Amounts owed by customers at 31 July 19X7	10 00
Stock of goods at the end of the year	11 00
Rent	2,50
Rates	80
Water and lights	50
Salesmen's salaries	4,00
Salesmen's commissions, not yet paid	60
Bank charges	12
Office wages	40
Telephone and postal charges	15
Advertising	1,00
Drawings during the year	4,00

Stocks and work-in-progress

Accounting for stocks: Almost every company carries stocks of some sort. In an agricultural business, these may be fertilisers, chemicals, produce, etc. Accounting for stocks presents a problem, because stocks in hand at the end of the financial year are regarded as current assets, whereas stocks used during the year form part of the company's costs. Hence, stocks (assets) appear in the balance sheet and stocks (used) must be accounted for in the trading and profit and loss account

Valuation of stocks: Valuing closing stocks has always been a problem and a source of disagreement. There are many methods of establishing the value of stocks. Three common alternatives are average cost, first in first out (Fifo) and last in first out (Lifo).

i) Average cost

Cost is calculated by taking the average price computed by dividing the total costs of production by the total number of units produced. This average price may be derived by means of a continuous update, a periodic calculation, or a moving period calculation. This method is often used to calculate the cost of low value items, e.g. in the manufacture of nails.

ii) First in first out (Fifo)

The calculation of the cost of stocks and work-in-progress is on the basis that the stocks in hand at the year end represent the latest purchases or production as the items going into stock at the earliest date are assumed to leave first e g a greengrocer will obviously wish to sell the oldest stocks first

iii) Last in first out (Lifo)

The calculation of the cost of stocks and work-in-progress is on the basis that the stocks in hand represent the earliest purchases or production, as it is assumed that the latest stocks into store are the first to be taken out, e.g. a 'bin' system, where purchases are added to the top and sales will be removed from the top.

Consider the following example comparing the effect of valuing stock of 240 units:

FIFO trading account

			$	$
Sales (March)		$360 @ $3.00		1,080
Purchases	(01 February)	$200 @ $2.00		
	(10 February)	$200 @ $2.25		
	(15 February)	$200 @ $2.50	1,350	
Less:	Closing stock	(bought 15 Feb)		
	$200 @ $2.00	(bought 10 Feb)	590	
	$ 40 @ $2.25			760
				320

LIFO trading account

			$	$
Sales (March)		$360 @ $3.00		1,080
Purchases	(01 February)	$200 @ $2.00		
	(10 February)	$200 @ $2.25		
	(15 February)	$200 @ $2.50	1,350	
Less:	Closing stock	(bought 15 Feb)		
	$200 @ $2.00	(bought 10 Feb)	490	
	$ 40 @ $2.25			860
				220

Note: In both cases, there are 240 items in stock. Valuing stocks using the latest prices, the gross profit is $320, whereas using the earliest prices the figure is $220.

The lower of cost and net realizable value: The most fundamental accounting concept with regards to the valuation of stocks and work-in-progress is that they need to be stated at cost, or if lower, at net realisable value. Net realisable value is the amount at which it is expected that items of stock and work-in-progress could be sold after allowing for the costs of completion and disposal. If net realisable value is higher than cost, then cost is taken, as valuing stocks at a higher value would not be prudent, i.e. profit would have been taken into account before it is actually earned. It is important to check against the net realisable value to ensure that the current asset, stock, is not stated at a figure above that for which it could be realised at the balance sheet date.

Stock provision: If it is decided to reduce the value of certain items of stock from cost to net realisable value, e.g. obsolete, slow moving or unsaleable stocks, this is done by means of a provision.

Stock is reduced in value, and a charge is made against profits. The full amount is deducted from stock in the balance sheet, but only the decrease between the beginning and end of a period is shown in that period's trading and profit and loss account.

Now attempt exercise 2.6.

Exercise 2.6 Valuation of stocks

Kubi Dwili began business as a small scale peanut importer in July 19X6. Purchases of peanuts were made as follows:

		Price per ton	
		$	$
19X6	Tons		
01 July	60	20.00	1,200
15 August	40	24.00	960
30 September	45	26.00	1,170
12 October	30	35.00	1,050
29 November	25	38.00	950
11 December	30	50.00	1.500
	230		6.830

On 10 October, 100 tons of peanuts were sold and on 31 December 70 tons were sold The total proceeds of the sale were $8,500.

You are required to calculate the value of closing stock and to prepare the trading account on the following bases:

a) first in first out
b) last in first out
c) average cost.

The interpretation of company accounts-ratio analysis

Why ratios: Ratios are the means of presenting information, in the form of a ratio or percentage, which enables a comparison to be made between one significant figure and another. Often the same ratios of like firms are used to compare the performance of one firm with another. A "one off" ratio is often useless - trends need to be established by company ratios over a number of years.

- The great volume of statistics made available in the annual accounts of companies must be simplified in some way. Present and potential investors can therefore quickly assess whether the company is a good investment or not.

- Financial ratio analysis is helpful in assessing an organisation's internal strengths and weaknesses. Potential suppliers will, for example, want to judge credit worthiness.

- Ratios by themselves provide no information; they simply indicate by exceptions where further study may improve company performance. Management can compare current performance with previous periods and competing companies.

Which areas are used for analysis?

Four key areas are generally used for analysis:

- profitability
- liquidity
- leverage (capital structure)
- activity or management effectiveness (efficiency).

a) Profitability

In most organisations profits are limited by the cost of production and by the marketability of the product. Therefore, "profit maximisation" entails the most efficient allocation of resources by management, and "profitability ratios" when compared to others in the industry will indicate how well management has performed this task

Key questions to be identified in profitability analysis include:

- Does the company make a profit?
- Is the profit reasonable in relation to the capital employed in the business?
- Are the profits adequate to meet the returns required by the providers of capital, for the maintenance of the business and to provide for growth?
- How are sales and trading profit split among the major activities?
- To what extent are changes due to price change?
- To what extent does volume change?
- Does inter-company transfer pricing policy distort the analysis?
- Has the appropriate proportion of profit been taken in tax charged?
- What deferred taxation policy is being followed?
- Has the share of profit (or loss) attributable to minority interests in subsidiaries changed? If so, is it clear why?
- Are profits and losses on sales of fixed assets:
  - -treated as adjustments of depreciation charges?
  - -disclosed separately "above the line" in the profit and loss account?
  - -treated as "below the line" items in the profit and loss account?
  - -transferred directly to reserves?
- What has been included in Extraordinary Items?
- Should any of these items be regarded as part of the ordinary business of the company?
- Do any items tend to recur year after year?
- Is it clear which items have been transferred directly to reserves without going through the profit and loss account?
- Is such treatment appropriate in each case?

b) Liquidity

"Liquidity measures" are based on the notion that a business cannot operate if it is unable to pay its bills. A sufficient amount of cash and other short-term assets must be available when needed. On the other hand, because most short term assets do not produce any return, a strong liquidity position will be damaging to profits. Therefore, management must try to keep the firm's liquidity as low as possible whilst ensuring that short term obligations will be met. This means that industries with stable and predictable conditions will generally require smaller current ratios than will more volatile industries.

Key questions to be identified in liquidity analysis include:

- Has the business sufficient liquid resources to meet immediate demands from creditors?
- Has the business sufficient resources to meet the requirements of creditors due for payment in the next 12 months i.e. creditors payable within one year?
- Has the business sufficient resources to meet the demands of its fixed asset replacement programme and its commitments to providers of long-term capital falling due for repayment in say, the next five years?

c) Leverage

"Leverage ratios" show how a company's operations are financed. Too much equity in a firm often means the management is not taking advantage of the leverage available with long-term debt. On the other hand, outside financing will become more expensive as the debt-to-equity ratio increases. Thus, the leverage of an organisation has to be considered with respect both to its profitability and the volatility of the industry

Key questions to be identified in leverage analysis include:

- What sort of capital has the company issued?
- Who owns the capital?
- What is the cost of capital in terms of interest or dividend?
- What proportions of the capital have a financed return (gearing or leverage)?
- Is the mix of capital optimum for the company?
- Is further capital available if required?
- Is total capital employed analysed among different classes of business?
- If so, can return on capital be calculated for each class?
- Has issued Ordinary share capital increased during the period?
- If so, why? e.g. Rights issue? Bonus (scrip) issue? Acquisition?
- Are "per share" figures calculated using appropriately weighted number of shares?
- Are prior years' figures comparable?
- What individual items have caused significant movements on Reserves?
- Do any of them really belong in the profit and loss account?
- Is any long term debt convertible into ordinary shares?
- On what terms?
- Calculate appropriate measures on "fully diluted
- basis
- Is any long term debt repayable within a short period?
- If so, should it be treated as a current liability?
- Are there significant borrowings in foreign currencies?
- Are they matched by foreign assets?
- How are exchange losses and gains thereon treated?
- Is there any preference capital?
- Is short term borrowing included in capital employed? Should it be?
- Is the treatment of pensions appropriate? Is information revealed?
- Would capitalising leases significantly affect long term debt and gearing ratios?

d) Activity

"Activity ratios" are used to measure the productivity and efficiency of a firm. When compared to the industry average, the fixed-asset turnover ratio, for example, will show

how well the company is using its productive capacity. Similarly, the inventory turnover ratio will indicate whether the company used too much inventory in generating sales and whether the company may be carrying obsolete inventory.

Key questions to be identified in activity analysis are:

- Does management control the costs of the business well?
- Which costs, if any, have changed significantly, thus reducing or improving apparent profitability?
- Does management control the investment in assets well?
- Are fixed assets sufficient for the current level of activity? Are they replaced on a regular basis and adequately maintained?
- Are the stock levels adequate for the level of activity, or excessive?
- Are debts collected promptly?
- Are creditors paid within a reasonable period of time?
- Are surplus cash resources invested to increase overall returns?
- How variable are the profits before interest and tax?
- How many times can the interest be paid from the available profit?
- How many times can the existing dividend be paid from the available profit?

e) Other

Other questions can be asked in interpreting final accounts. These may relate to long-term trends in the business or to fixed assets, e.g.

i) *Long-term trends in the business*

- Are profits increasing or decreasing?
- Is the size of the business growing faster or slower than inflation?
- How has past growth been financed?
- Are the levels of stocks, debtors and creditors consistent with the long-term growth of the business?
- Are dividends increasing?
- Have any radical changes occurred in the past, giving rise to major changes in the business?

ii) *Fixed assets*

- Where fixed assets are shown "at historical cost":
  - -How old are they? What is their estimated current value?
  - -How would revaluation affect the depreciation charge?
- Where fixed assets are shown "at valuation":
  - -When was the valuation made, and on what basis?
  - -How have values changed since that date?
  - -Might the assets be more valuable if used for other purposes?
- What method of depreciation is used for valuation?
- What asset lives are used? Are different lives used for Current Cost Accounting?
- Has adequate provision been made for technological obsolescence?
- Are any assets leased? What is their value?
- How much are the annual rentals? How long is the commitment?
- Is goodwill:
  - -Shown as an asset?
  - -Written off against reserves?
  - -Being amortized by charges against profit?

- How does the book value of goodwill compare with the estimated surplus of the current value of fixed assets over their net book value?
- Has the status of any investments changed during the period? Subsidiaries? Associated companies? Trade investments? Non-consolidated subsidiaries?
- Are investments in associated companies shown by the "cost" method or by the "equity" method?
- What is the difference between cost and market value of quoted investments? Is market value used if it is lower than cost?
- Are there any long-term debtors? How have they been treated in the balance sheet?

Methods used to evaluate organizational performance

To evaluate the performance of a company with respect to these ratios, three methods are used, namely industry comparisons, time series analysis and absolute standards.

a) Industry comparisons

Data are used, such as that provided by commercial firms like Dun and Bradstreet and Profit Impact of Marketing Strategies (PIMS), are used for comparing the company with others of about the same size, that serve the same market and have similar products. The danger is that when industry averages include companies with different products or markets, averages can be misleading.

b) Time series analysis

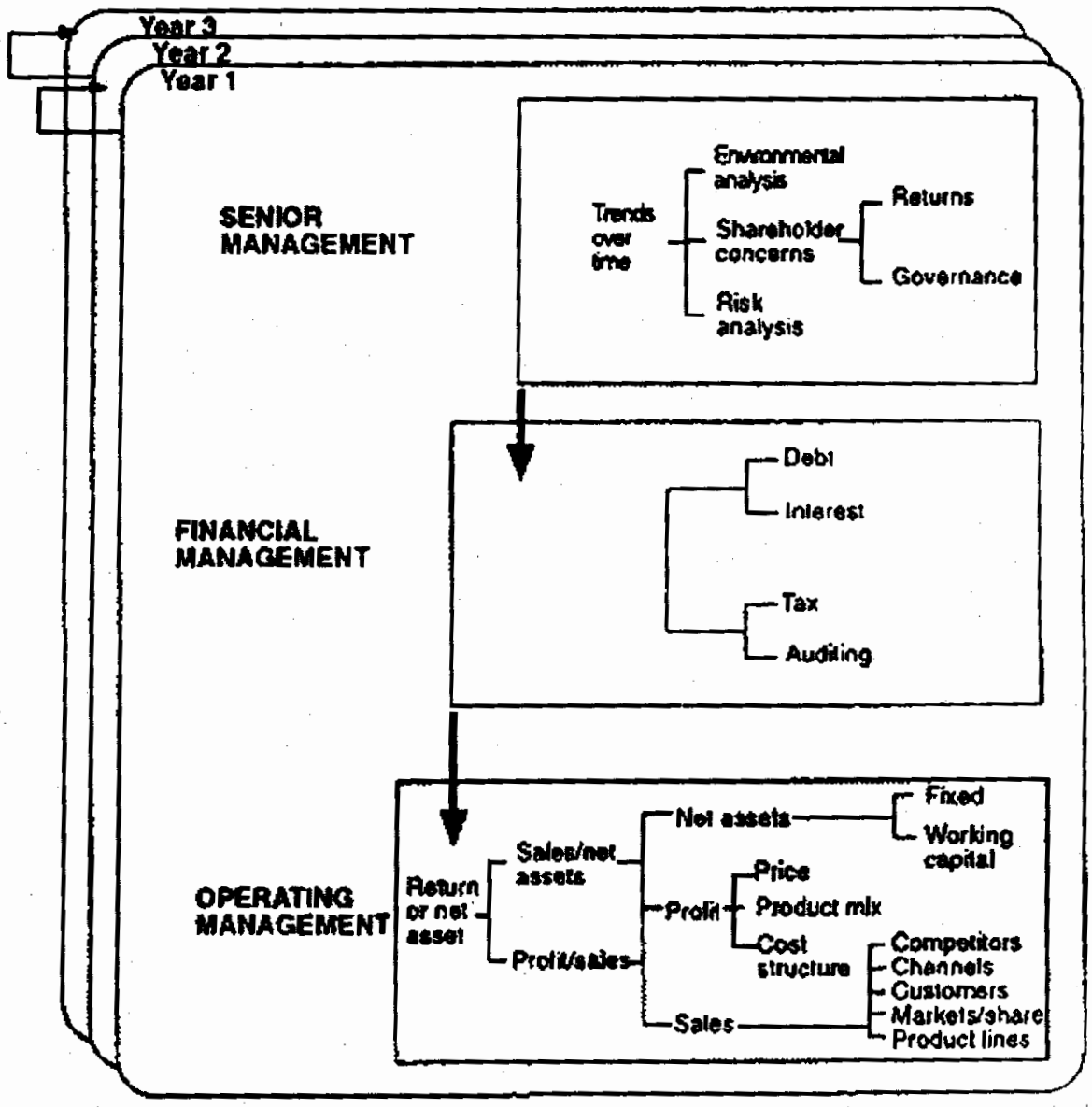
Ratios for several periods are used to determine whether significant changes have occurred. These time series can also be used to project the future financial performance of the company.

c) Absolute standards

Most organizations have some minimum requirements for corporate performance regulations of the particular industry, e.g. the long-term debt-to-equity ratio should not exceed one. A thorough financial analysis usually is a condition of these three approaches.

Figure 2.5 shows an example of how a time series analysis can be used to back financial and business objectives.

Figure 2.5 Framework for linking financial business objectives



The main types of ratio

1) Profitability

a) Gross profit margin or profit margin on sales:

$$\frac{Sales - Cost\ of\ goods\ sold}{Sales} \quad \text{or} \quad \frac{Pre-tax\ profit + Interest}{Sales}$$

b) Net profit margin:

$$\frac{Profit\ after\ tax}{Sales}$$

c) Return on assets:

$$\frac{\text{Pre-tax} + \text{Interest (long term)}}{\text{Issued capital} + \text{Reserves} + \text{Debt capital (long term) i.e. assets}}$$

d) Return on equity

$$\frac{\text{Profit after tax}}{\text{Total equity}}$$

Note that:

$$\frac{\text{SALES}}{\text{NAV}} X \frac{\text{PROFIT} + \text{INTEREST}}{\text{SALES}} = \frac{\text{PROFIT} + \text{INTEREST}}{\text{NAV}}$$

NAV = Net asset value i.e. Net asset turnover X profit margin = return on assets

2) Liquidity

a) Current ratio

$$\frac{\text{Current assets}}{\text{Current liabilities}}$$

b) Quick (liquidity or acid test ratio):

$$\frac{\text{Current assets} - \text{Inventory}}{\text{Current liabilities}}$$

c) Defensive interval ratio:

$$\frac{\text{Liquid assets}}{\text{Daily operating expenses}}$$

d) Inventory to net working capital:

$$\frac{\text{Inventory}}{\text{Current assets} - \text{Current liabilities}}$$

3(i) Leverage (coverage ratios or gearing) - debt cover

a) Conventional leverage:

$$\frac{\text{Debentures and loans}}{\text{Total shareholders funds (net worth)}}$$

b) Murphy Prussman Gearing:

$$\frac{\text{Debenture} + \text{Loans} + \text{Bank overdrafts}}{\text{Total long term financing} + \text{Bank overdraft}}$$

c) U.S. measure of leverage:

$$\frac{\text{Debenture} + \text{Loans} + \text{Bank overdrafts}}{\text{Total assets}}$$

(ii) Leverage - interest cover

d) Interest coverage:

$$\frac{\text{Net profit before interest and tax}}{\text{Interest}}$$

e) Cumulative interest coverage:

$$\frac{\text{Net profit before interest and tax}}{\text{Cumulative interest}}$$

4) Activity (efficiency ratios)

a) Debtors turnover:

$$\frac{\text{Closing debitors}}{\text{Sales}}$$

b) Creditors turnover:

$$\frac{\text{Closing debitors}}{\text{Purchases}} \times 365$$

c) Inventory turnover:

$$\frac{\text{Cost of goods sold}}{0.5\ (\text{Opening and closing stock})}$$

d) Wages turnover:

$$\frac{\text{Sales}}{\text{Wages}}$$

e) Net asset turnover:

$$\frac{\text{Sales}}{\text{Net asset value}}$$

f) Profits per employee:

$$\frac{\text{Pre-tax profits}}{\text{Number of employees}}$$

Other useful ratios

1) Stock market ratios

a) Earnings per share:

$$\frac{\text{Profit after tax}}{\text{Number of ordinary shares in issue}}$$

b) Price earnings ratio:

$$\frac{\text{Market price per share}}{\text{Earnings per share}}$$

c) Dividend yield (net):

$$\frac{\text{Dividend per share (net)}}{\text{Market price per share}}$$

d) Dividend cover:

$$\frac{\text{Earnings per share}}{\text{Dividend per share}}$$

Financial measures of business unit performance

If an organization is made up of multiple divisions or Strategic Business Units (SBU's), then the following measures can be computed, provided that balance sheet and income statement data are available at the divisional or SBU level. These analyses enable corporate management to assess the performance of divisions, SBU's and/or their management.

a) Return on sales (ROS)

ROS is computed by dividing net income (NI), or profit (P) before or after interest and taxes, by total revenue:

$$\text{ROS} = \frac{\text{Net Income (or Profit) \$}}{\text{Sales \$}} \times 100$$

Some argue that interest expenses and tax should not be considered as they are outside the SBU manager's control. However, interest may be added to show managers that invested funds are not a free resource. This, however, understates the true cost of capital employed, because the interest is a charge for only the debt portion of capital.

b) Return on investment (ROI), return on net assets (RONA) and return on equity (ROE)

$$\text{ROI} = \frac{\textit{Net Income (or Profit)\$}}{\textit{Total assets \$}} \times 100$$

$$\text{RONA} = \frac{\textit{Net Income (or Profit)\$}}{\textit{Net assets \$}} \times 100$$

Note: NET ASSETS = TOTAL ASSETS- TOTAL LIABILITIES

$$\text{RONA} = \frac{\textit{NI (or P)\$}}{\textit{Owner's equity}} \times 100$$

$$= \frac{\textit{NI (or P)\$}}{\textit{(Total assets - All liabilities)}} \times 100$$

Note: Owner's equity = total assets - total liabilities

In using any of these measures to assess an SBU manager's ability to use assets efficiently, account should be taken of whether cash is centrally controlled or headquarters determines both credit and payment policies. If the latter, then cash receivables or payables or both should be omitted from the investment base.

c) Cash flow (CF)

Cash flow is not the same as net income (NI) or profit (P). It differs in two ways:

i) Cash flow includes depreciation, as this is a bookkeeping transaction, and tax, because tax is a cash cost. Thus,

CF = NI (or P) after tax and depreciation

ii) Cash flow is affected by balance sheet changes, e.g. increase in accounts receivable or additions to fixed assets (FA), e.g. plant and equipment and changes in working capital (WC).

CF = Net Income (or Profit) after tax *plus* Depreciation *minus* changes in FA and *minus* changes in WC

Note: If no tax is paid or if tax is deferred, use Net Income (or Profit) before tax.

The changes in (Δ) are calculated by the company's balance sheet entries for two consecutive periods.

Working Capital =

Δ Cash *plus or minus*
Δ Stock *plus or minus*

Δ Accounts receivable *plus or minus*
Δ Accounts payable (and other short-term liabilities)

Example:

Balance sheet

	2001	2002
	$(000's)	$(000's)
Profit	400	380
Plus		
Depreciation	120	125
Cash flow from operations	520	505
Less		
Increase in Working capital	(380)	(420)
Increase in Fixed Assets	(90)	(105)
Net cash generated or (Used)	50	(20)

d) Sustainable growth rate (SGR)

This is a measure of the ability of the business to grow within the constraints of its current financial policies. What is required is a balance sheet for the SBU which includes a justified assignment of the proportion of the total corporate short-run liabilities and long-run debt.

Once accomplished, the maximum sustainable growth rate (a measure of the ability of the business to fund the new assets needed to support increased sales) is estimated by:

$$SGR = \frac{p[(1-d)(1+L)]}{t - p[(1-d)(1+L)]}$$

where:

p = profit margin after taxes
d = dividend payout ratio (for a business unit this is computed from the corporate overhead charge plus any dividend paid to corporate?)
L = debt to equity ratio
t = ratio of assets (physical plant and equipment plus working capital) to sales.

The growth rate is expressed in nominal terms. Real SGR is reduced by 2.2% for every 5% of inflation for two reasons:

i) Depreciation charges based on historical costs overstate taxable income because they fail to fully recover the economic value of depreciating assets.
ii) Working capital increase solely due to inflation requires financing.

If the actual growth rate exceeds SGR, then the organisation can consider a number of strategic actions which affect the "productivity" side of the quest for increased profits ("productivity" as opposed to "volume" strategies to increase profits) These are

i) reduce investment intensity (cut stocks and/or receivables)
ii) reduce dividends
iii) obtain injections of "equity" from the corporate body
iv) increase debt.

Now attempt exercise 2.7.

Exercise 2.7 Ratio analysis

Nigel Munyati's horticultural business continued to flourish. Six years later his condensed financial accounts for the last three years are summarised below (N.B. he introduced fresh capital into the business):

Profit and Loss account for the year to 31 March	1999		2000		2001	
			$(000's)			
Sales (all on credit)		415		645		885
Less: Cost of goods sold:						
Opening stock	35		40		65	
Purchases	340		565		805	
	375		605		870	
Less; Closing stock	40	335	65	540	115	755
Gross profit		80		105		130
Less: Expenses	40		50		60	
Loan interest	-	40	-	50	10	70
Net Profit		40		55		60

Balance Sheet as at 31 March	1999		2000		2001	
			($ 000's)			
Fixed assets		89		93		101
Current assets						
Stocks	40		65		115	
Trade debtors	52		108		250	
Cash at Bank	12	104	6	179	-	365
		193		272		466
Financed by:						
Capital		100		120		146
Add. Net profit for the year	40		55		60	
Less: Drawings	24	16	35	20	38	22
(all on 31 March)		116		140		168
Loan		-		-		110
Current liabilities						
Creditors	77		132		178	
Bank overdraft	-	77	-	132	10	188
		174		272		466

Compute the following ratios for 1999, 2000 and 2001.

a) gross profit on sales
b) gross profit on cost of goods sold
c) stock turnover
d) return on capital employed
e) current ratio
f) liquidity (or quick) ratio
g) debtor collection period

h) working capital
i) ratio of current assets to total assets
j) ratio of cash to current liabilities

Comment briefly on the results of the business over the last three years

Key terms

Activity

ratio
Average cost
Balance sheet
Capital expenditure
Cost of goods sold
Credit balances
Current liabilities
Debit balances
Direct and indirect costs
Dual effect
First-In-first-out
Fixed and current assets
Gross margin
Gross sales
Last-in-first-out
Leverage
Liquidity ratios
ess

Loans
Manufacturing account
Net profit
Net sales
Net sales and net purchases
Opening and closing stock
Overheads
Profit
Profitability ratios
Profit and loss account
Ratio analysis
Revenue expenditure
Trading account
The accounting equation
Working capital
Work-in-progr

Chapter 3 - Cash flow accounting

Chapter objectives

This chapter is intended to provide an explanation of:

- The aim, use and construction of cash flow statements
- The meaning and calculation of the source and application of funds statement and their importance to business
- A discussion on credit and types of loans available to businesses
- An explanation of the cost of funds and capital
- The importance and calculation of ownership costs, including depreciation, interest, repair, taxes and insurance.

It can be argued that 'profit' does not always give a useful or meaningful picture of a company's operations. Readers of a company's financial statements might even be misled by a reported profit figure.

Shareholders might believe that if a company makes a profit after tax of say $100,000, then this is the amount which it could afford to pay as a dividend. Unless the company has sufficient cash available to stay in business and also to pay a dividend, the shareholders' expectations would be wrong. Survival of a business depends not only on profits but perhaps more on its ability to pay its debts when they fall due. Such payments might include 'profit and loss' items such as material purchases, wages, interest and taxation etc, but also capital payments for new fixed assets and the repayment of loan capital when this falls due (e.g. on the redemption of debentures).

Structure of the chapter

"Cash flow" is one of the most vital elements in the survival of a business. It can be positive, or negative, which is obviously a most undesirable situation. The chapter develops the concept of cash flow and then shows how the funds can be used in the business. Funds are not only generated internally; they may be externally generated, and so the chapter finishes with a discussion of externally generated funds.

Aim of a cash flow statement

The aim of a cash flow statement should be to assist users:

- to assess the company's ability to generate positive cash flows in the future
- to assess its ability to meet its obligations to service loans, pay dividends etc
- to assess the reasons for differences between reported and related cash flows
- to assess the effect on its finances of major transactions in the year.

The statement therefore shows changes in cash and cash equivalents rather than working capital.

Indirect method cash flow statement

Figure 3.1 shows a pro forma cash flow statement.

Figure 3.1 Pro forma cash flow statement

Cash Flow Statement For The Year Ended 31 December 2001		
	$	$
Net cash inflow from operating activities	X	
Returns on investments and servicing of finance		
Interest received	X	
Interest paid	(X)	
Dividends paid	(X)	
Net cash inflow/ (outflow) from returns on investments and servicing of finance		X
Taxation		
Corporation tax paid	(X)	
Tax paid		(X)
Investing activities		
Payments to acquire intangible fixed assets	(X)	
Payments to acquire tangible fixed assets	(X)	
Receipts from sales of tangible fixed assets	X	
Net cash inflow/ (outflow) from investing activities	X or	(X)
Net cash inflow before financing		X
Financing		
Issue of ordinary capital	X	
Repurchase of debenture loan	(X)	
Expenses paid in connection with share issues	(X)	
Net cash inflow/ (outflow) from financing	X or	(X)
Increase/ (Decrease) in cash and cash equivalents		X

NOTES ON THE CASH FLOW STATEMENT

1. *Reconciliation of operating profit to net cash inflow from operating activities*

		$
Operating profit		X
Depreciation charges		X
Loss on sale of tangible fixed assets		X
Increase/(decrease) in stocks	(X)	
Increase/(decrease) in debtors	(X)	
Increase/(decrease) in creditors		X
Net cash inflow from operating activities		X

2. *Analysis of changes in cash and cash equivalents during the year*

Balance at 1 January 2001	X
Net cash inflow	X
Balance at 31 December 2001	X

3. *Analysis of the balances of cash and cash equivalents as shown in the balance sheet*

	19X4	19X3	Change in year
	$	$	$
Cash at bank and in hand	X	X	(X)
Short term investments	X	X	X
Bank overdrafts	(X)	(X)	(X)
	X	X	X

4. Analysis of changes in finance during the year

	Share capital	Debenture loan
	$	$
Balance at 1 January 2001	X	X
Cash inflow/(outflow) from financing	X	(X)
Profit on repurchase of debenture loan for less than its book value	-	(X)
Balance at 31 December 2001	X	X

Note: Any transactions which do not result in a cash flow should not be reported in the statement. Movements within cash or cash equivalents should not be reported.

Explanations

It is often difficult to conceptualise just what is "cash" and what are "cash equivalents". Cash need not be physical money; it can take other forms.

a) Cash in hand and deposits repayable on demand with any bank or financial institution.

b) Cash equivalents: Short term, highly liquid investments that are readily convertible to known amounts of cash and which are subject to an insignificant risk of changes in value.

c) Operating activities: Principal revenue-producing activities of the company and other activities that are not investing or financing activities. The reconciliation between the operating profit reported in the profit and loss account and the net cash flow from operating activities must show the movements in stocks, debtors and creditors related to operating activities.

d) Returns on investments and servicing of finance. Cash inflows from these sources includes:

i) interest received, also any related tax recovered, and
ii) dividends received.

Cash outflows from these sources includes:

i) interest paid
ii) dividends paid
iii) interest element of finance lease payments.

e) Taxation: These cash flows will be those to and from the tax authorities in relation to the company's revenue and capital profits, i.e. corporation tax.

f) Investing activities: the acquisition and disposal of long term assets and other investments not included in cash equivalents.

Cash receipts include:

i) receipts from sales or disposals of fixed assets (or current asset investments)
ii) receipts from sales of investments in subsidiary undertakings net of any cash or cash equivalents transferred as part of the sale
iii) receipts from sales of investments in other entities
iv) receipts from repayment or sales of loans made to other entities.

Cash payments include;

i) payments to acquire fixed assets
ii) payments to acquire investments in subsidiary net of balances of cash and cash equivalents acquired
iii) payments to acquire investments in other entities
iv) loans made and payments to acquire debt of other entities.

g) Financing: activities that result in changes in the size and composition of the equity capital and borrowings of the enterprise.

Financing cash inflows include:

i) receipts from issuing shares or other equity instruments
ii) receipts from issuing debentures, loans, notes and bonds and so on

Financing cash outflows include:

i) repayments of amounts borrowed
ii) the capital element of finance lease rental payments
iii) payments to re-acquire or redeem the entity's shares.

Now attempt exercise 3.1.

Exercise 3.1 Cash flow statement

Set out below are the accounts for *TPK Pvt Ltd* as at 31 December 2000 and 2001.

PROFIT AND LOSS ACCOUNTS FOR THE YEARS TO 31 DECEMBER	2000	2001
	Z$'000	Z$'000
Operating profit	9,400	20,640
Interest paid	-	(280)
Interest received	100	40
Profit before taxation	9,500	20,400
Taxation	(3,200)	(5,200)
Profit after taxation	6,300	15,200
Dividends		
Preference (paid)	(100)	(100)
Ordinary: interim (paid)	1,000)	(2,000)
final (proposed)	(3,000)	(6,000)
Retained profit for the year	2,200	7,100
BALANCE SHEETS AS AT 31 DECEMBER		
Fixed Assets		
Plant, machinery and equipment at cost	17,600	23,900
Less: accumulated depreciation	9,500	10,750
	8,100	13,150
Current Assets		
Stocks	5,000	15,000
Trade debtors	8,600	26,700
Prepayments	300	400
Cash at bank and in hand	600	-
	14,500	42,100
Current liabilities		
Bank overdraft	-	16,200
Trade creditors	6,000	10,000
Accruals	800	1,000
Taxation	3,200	5,200
Dividends	3,200	6,000
	3,000	38,400
	9,600	16,850
Share capital		
Ordinary shares of $1 each	5,000	5,000
10% preference shares of $1 each	1,000	1,000
Profit and loss account	3,000	10,100
	9,000	16,100
Loans		
15% debenture stock	600	750
	9,600	16,850

Prepare a cash flow statement for the year to 31 December 2001.

Statements of source and application of funds

Although cash flow statements have now superseded statements of source and application of funds, funds flow statements may not disappear entirely. Some

businesses or industries will continue to find fund flow statements useful and informative. For this reason, it is necessary to examine funds flow statements.

Funds statement on a cash basis

Funds statements on a cash basis can be prepared by classifying and/or consolidating:

a) net balance sheet changes that occur between two points in time into changes that increase cash and changes that decrease cash

b) from the income statement and the surplus (profit and loss) statement, the factors that increase cash and the factors that decrease cash and

c) this information in a sources and uses of funds statement form.

Step (a) involves comparing two relevant Balance sheets side by side and then computing the changes in the various accounts.

Sources of funds that increase cash

Sources of funds which increase cash are as follows:

- a net decrease in any asset other than cash or fixed assets
- a gross decrease in fixed assets
- a net increase in any liability
- proceeds from the sale of preferred or common stock
- funds provided by operations (which usually are not expressed directly in the income statement).

To determine funds provided by operations, we have to add back depreciation to net income after taxes. In other words, suppose we have:

Net income after taxes of a company, being	= $750,000
and depreciation (non-cash expense), being	= $100,500
	850,500

Then, the funds provided by operations of such a company will be obtained by adding the values of the two above items, i.e. $850,500. Thus, the net income of a company usually understates the value of funds provided by operations by the value of the depreciation - in this case by $100,500.

But then, depreciation is not a source of funds, since funds are generated only from operations. Thus, if a company sustains an operating loss before depreciation, funds are not provided regardless of the magnitude of the depreciation charges

Application of funds of a company usually include:

- a *net increase* in any asset other than cash or fixed assets
- a *gross increase* in fixed assets
- a *net decrease* in any liability

- a retirement or purchase of stock and
- the payment of cash dividends.

To avoid double counting, we usually compute gross changes in fixed assets by adding depreciation for the period to net fixed assets at the ending financial statement date and subtract from the resulting amount the net fixed assets at the beginning financial statement date. The residual represents the gross change in fixed assets for the period. If the residual is positive, it represents a use of funds; if it is negative, it represents a source of funds.

Once all sources and applications of funds are computed, they may be arranged in statement form so that we can analyse them better.

Now attempt exercises 3.2 and 3.3

Exercise 3.2 Source and application of funds I

Given below are some different sources and applications of funds finance items purposely scattered for an Agribusiness Company K for the year ended 31 December 19X8.

1) Identify them as sources and applications of funds, and arrange them in a proper manner with the Sources of funds on the left and the Applications on the right of a tabulated statement for the said period.

2) Comment briefly on some of the uses of the tabulated statement.

	$
Increase in cash position =	12,000
Decrease in debtors =	8,000
Increase in long term debt =	2,500
Increase in stocks =	26,500
Increase in tax prepayments =	2,000
Net profit =	35,000
Increase in other accruals =	3,000
Additions to fixed assets =	4,500
Cash dividends =	15,000
Increase in bank loans =	20,000
Increase in prepaid expenses =	2,500
Increase in investments =	9,000
Increase in creditors =	5,000
Decrease in accrued taxes =	8,000
Depreciation =	6,000

Note: The above figures are based on the balance sheet and income statement of Company K, which are not shown in this exercise.

Exercise 3.3 Sources and applications of funds II

Using the data and information in the annual reports (especially the balance sheet and income statements) of Cerial Marketing Board provided for 1993 and 1992:

a) compute and identify the sources and applications of funds of the parastatal for the years 1992 and 1993 and

b) arrange them into a sources and applications of funds statement for 1993

Funds use and credit planning

Funds (or capital) is a collective term applied to the assortment of productive inputs that have been produced. Funds may be broadly categorised into operating (or working) capital (difference between current assets and current liabilities), and ownership (or investment) capital.

Operating capital in a company or firm usually refers to production inputs that are normally used up within a production year. On the other hand, investment capital (or funds) refers to durable resources like machines and buildings in which money invested is tied up for several years. Funds are generally quantified in monetary value terms.

Funds use, especially borrowed capital, is usually influenced by many factors, namely: the alternative demands for it; the availability of credit as and when needed; the time and interest rate payable on it; the types of loans that might be needed to generate it; and the cost of funds and business ownership cost. Thus, careful credit planning is essential in the successful operations of any company.

In general, this requires the application of what, in strategic company management, has come to be known as the strategic four-factor model called "SORS". The letters that make up SORS stand for:-

- Strategic planning (S)
- Organisational planning (O)
- Resource requirements (R)
- Strategic control (S).

Figure 3.2 summarises the simplified matrix of interacting factors and component parts that make up 'SORS'. In general terms, SORS is influenced or determined by four major factors: the external environment, the internal environment, organisational culture and resource (especially funds) availability. These four factors interact to create four inter-related components which normally determine the success or failure of any given company. These are:

a) competitive environment
b) strategic thrust
c) product/market dynamics
d) competitive cost position and restructuring.

A proper and pragmatic manipulation of these four component parts requires:

- assessing the external environment
- understanding the internal environment
- adopting a leadership strategy
- strategically planning the finances of the company.

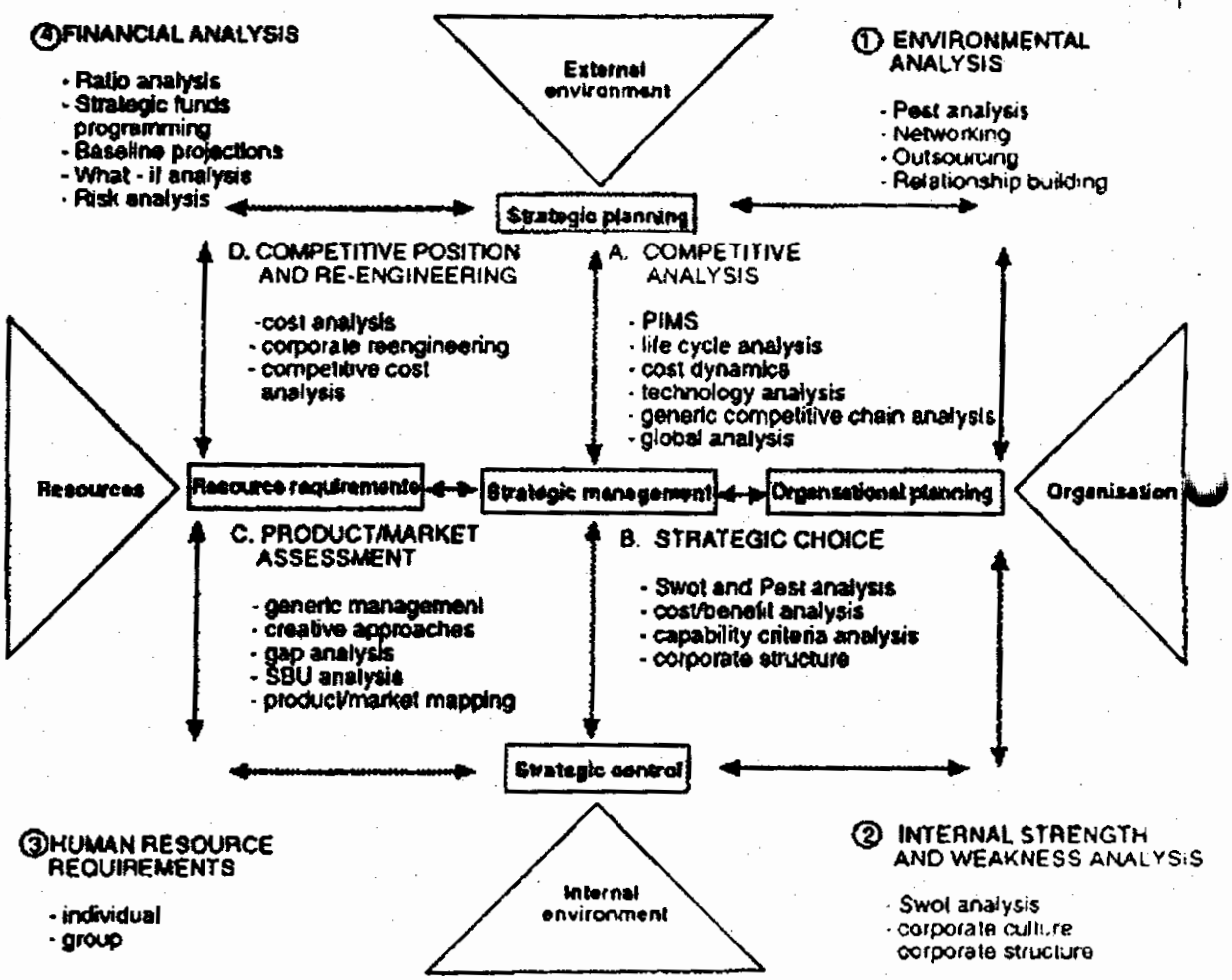
The purpose of this text is not to cover all the components summarised in figure 3.1. Instead, the major concern is to have a proper understanding of financial analysis for strategic planning. This, in strategic management, requires a sound financial analysis backed by strategic funds programming, baseline projections (or budgeting), what-if (decision tree) analysis, and risk analysis. This book attempts to cover all these areas.

Alternative uses of funds

Dealing with alternatives is what management is all about. Some of the tools for evaluating alternatives (e.g. partial budgets, cash flow budgets and financial statements), are covered in this text.

It is assumed that most people are already familiar with the analysis that usually leads to major capital use decisions in various companies. However, highlighted are some of these points throughout the book, since company backgrounds differ and what is considered "major capital use decisions" varies with the size of businesses. For instance, a $50,000 expenditure may be major to one company and of little significance to another.

Figure 3.2 The strategic four-factor model



Almost everyone is familiar with the substantial capital or funds demand in all forms of business. Obviously, this does not all have to be owned capital. Evaluation of

successful businesses has found that many of them operate with 50 percent or more rented or borrowed capital. The pressure on businesses to grow is likely to continue, and these businesses are likely to grow faster than will be permitted by each reinvesting its own annual savings from net income alone. Thus, because demand for credit will continue to expand, careful credit planning and credit use decisions are of paramount importance to marketing companies in any country.

Credit and types of loans

Credit is the capacity to borrow. It is the right to incur debt for goods and/or services and repay the debt over some specified future time period. Credit provision to a company means that the business is allowed the use of a productive good while it is being paid for.

Other than the fact that funds generated within a business are usually inadequate to meet expanding production and other activities, credit is often used in order to

- increase the returns on equity capital
- allow more efficient labor utilization
- increase income.

The process of using borrowed, leased or "joint venture" resources from someone else is called leverage. Using the leverage provided by someone else's capital helps the user business go farther than it otherwise would. For instance, a company that puts up $1,000 and borrows an additional $4,000 is using 80% leverage. The objective is to increase total net income and the return on a company's own equity capital.

Borrowed funds are generally referred to as loans. There are various ways of classifying loans, namely:

- *in payment terms*, e.g. instalment versus single payment
- *in period-of-payment terms*, e.g. short-term versus intermediate-term or long-term
- *in the manner of its security terms*, e.g. secured versus unsecured
- *in interest payment terms*, e.g. simple interest versus add-on, versus discount, versus balloon.

On the basis of the above classification, there are twelve common types of loans, namely: short-term loans, intermediate-term loans, long-term loans, unsecured loans, secured loans, instalment loans, single payment loans, simple-interest loans, add-on interest loans, discount or front-end loans, balloon loans and amortised loans.

Short-term loans are credit that is usually paid back in one year or less. Short term loans are usually used in financing the purchase of operating inputs, wages for hired labour, machinery and equipment, and/or family living expenses. Usually lenders expect short-term loans to be repaid after their purposes have been served, e.g. after the expected production output has been sold.

Loans for operating production inputs e.g. cotton for the Cotton Company of Zimbabwe (COTCO) and beef for the Cold Storage Company of Zimbabwe (CSC), are assumed to be self-liquidating. In other words, although the inputs are used up in the production, the added returns from their use will repay the money borrowed to

purchase the inputs, plus interest. Astute managers are also expected to have figured in a risk premium and a return to labour management. On the other hand, loans for investment capital items like machinery are not likely to be self-liquidating in the short term. Loans for family living expenses are not at all self-liquidating and must come out of net cash income after all cash obligations are paid.

Intermediate-term (IT) loans are credit extended for several years, usually one to five years. This type of credit is normally used for purchases of buildings, equipment and other production inputs that require longer than one year to generate sufficient returns to repay the loan.

Long-term loans are those loans for which repayment exceeds five to seven years and may extend to 40 years. This type of credit is usually extended on assets (such as land) which have a long productive life in the business. Some land improvement programmes like land levelling, reforestation, land clearing and drainage-way construction are usually financed with long-term credit.

Unsecured loans are credit given out by lenders on no other basis than a promise by the borrower to repay. The borrower does not have to put up collateral and the lender relies on credit reputation. Unsecured loans usually carry a higher interest rate than secured loans and may be difficult or impossible to arrange for businesses with a poor credit record.

Secured loans are those loans that involve a pledge of some or all of a business's assets. The lender requires security as protection for its depositors against the risks involved in the use planned for the borrowed funds. The borrower may be able to bargain for better terms by putting up collateral, which is a way of backing one's promise to repay.

Instalment loans are those loans in which the borrower or credit customer repays a set amount each period (week, month, year) until the borrowed amount is cleared. Instalment credit is similar to charge account credit, but usually involves a formal legal contract for a predetermined period with specific payments. With this plan, the borrower usually knows precisely how much will be paid and when.

Single payment loans are those loans in which the borrower pays no principal until the amount is due. Because the company must eventually pay the debt in full, it is important to have the self-discipline and professional integrity to set aside money to be able to do so. This type of loan is sometimes called the "lump sum" loan, and is generally repaid in less than a year.

Simple interest loans are those loans in which interest is paid on the unpaid loan balance. Thus, the borrower is required to pay interest only on the actual amount of money outstanding and only for the actual time the money is used (e.g. 30 days, 90 days, 4 months and 2 days, 12 years and one month).

Add-on interest loans are credit in which the borrower pays interest on the full amount of the loan for the entire loan period. Interest is charged on the face amount of the loan at the time it is made and then "added on". The resulting sum of the principal and interest is then divided equally by the number of payments to be made. The company is thus paying interest on the face value of the note although it has use of only a part of the initial balance once principal payments begin. This type of loan is sometimes called the "flat rate" loan and usually results in an interest rate higher than the one specified.

Discount or front-end loans are loans in which the interest is calculated and then subtracted from the principal first. For example, a $5,000 discount loan at 10% for one year would result in the borrower only receiving $4,500 to start with, and the $5,000 debt would be paid back, as specified, by the end of a year.

On a discount loan, the lender discounts or deducts the interest in advance. Thus, the effective interest rates on discount loans are usually much higher than (in fact, more than double) the specified interest rates.

Balloon loans are loans that normally require only interest payments each period until the final payment, when all principal is due at once. They are sometimes referred to as the "last payment due", and have a concept that is the same as the single payment loan, but the due date for repaying principal may be five years or more in the future rather than the customary 90 days or 6 months for the single payment loan.

In some cases a principal payment is made each time interest is paid, but because the principal payments do not amortise (pay off) the loan, a large sum is due at the loan maturity date.

Amortised loans are a partial payment plan where part of the loan principal and interest on the unpaid principal are repaid each year. The standard plan of amortisation, used in many intermediate and long-term loans, calls for equal payments each period, with a larger proportion of each succeeding payment representing principal and a small amount representing interest.

The repayment schedule for a 10 year standard amortised loan of $10,000 at 7% is presented in table 3.1.

The constant annual payment feature of the amortised loan is similar to the "add on" loan described above, but involves less interest because it is paid only on the outstanding loan balance, as with simple interest. Amortisation tables are used to determine the regular payment for an amortised loan. The $1,424.00 annual payment for the 10 year loan was determined by using the amortisation factor (AF) of 0.1424 and multiplying that by $10,000, the face value of the loan. The proper procedure for deriving a schedule as in table 3.1 is to:

a) first read off the amortisation factor from an amortisation table for a given interest rate against the given year the loan is expected to last
b) calculate the total payment at the end of each year
c) then, on a year-by-year basis, calculate the annual interest payable on the balance of the principal
d) obtain the annual principal payment by subtracting the calculated annual interest from the total end-of-year payment.

Repeat the procedure for each of the years involved. Now attempt exercise 3.4

Table 3.2 Amortization of a $10,000 loan in 10 years by equal annual installments @ 7% interest

Year	Unpaid principal at beginning of year ($)	Payment at the end of the year		
		Interest ($)	Principal ($)	Total ($)
1	10,000.00	700.00	724.00	1,424.00
2	9,276.00	649.30	774.70	1,424.00
3	8,501.30	595.10	828.90	1,424.00
4	7,672.40	537.10	886.90	1,424.00
5	6,785.50	475.00	949.00	1,424.00
6	5,836.50	408.60	1,015.40	1,424.00
7	4,821.10	337.50	1,086.50	1,424.00
8	3,734.60	261.40	1,162.60	1,424.00
9	2,572.00	180.00	1,244.00	1,424.00
10	1,328.00	93.00	1,331.00	1,424.00
Total		4,240.00	10,000.00	14,240.00

Exercise 3.4 Amortized loan

Suppose a new machine is being financed by the Dairiboard of Zimbabwe Ltd with an 18 year $25,000 loan at a 9% interest rate. Obtain an amortisation schedule to show how the Dairiboard of Zimbabwe Ltd will pay off the resulting amortised loan. (Hint: the AF is 0.1142).

Cost of funds

The cost of funds (capital) is crucial to investment analysis. Usually, the present value measures of an investment's economic worth depend on the use of an appropriate discount rate (or rate of return). The most appropriate rate is the firm's cost of capital. This rate, when determined, provides a yardstick for testing the acceptability of any investment; those that have a high probability of achieving a rate of return in excess of the firm's cost of capital are acceptable.

A firm's cost of capital may be estimated through:

a) the use of the interest rate attainable by "investing" in lending institutions (deposits or securities) before taxes as an estimate of opportunity cost of capital and

b) the determination of the weighted average after-tax cost of capital, which reflects the cost of all forms of capital the firm uses. The two basic sources of capital are borrowed funds from lending institutions and ownership or internal capital representing profits reinvested in the business.

To estimate the weighted average cost of capital, one needs to determine:

a) the present cost of borrowed or leased funds from each source
b) an average cost of internal capital as reflected by the percentage of equity in business and risks being taken and
c) an adjustment for income tax effect.

Cost of borrowed capital

Lenders' interest rates vary by type of lender. And since many of these lenders' rates are keyed to money market conditions, predicting costs of borrowed capital through time is imprecise. Less difficulty exists when borrowers have considerable long-term borrowings at fixed rates. Normally, a rough idea of the average cost of borrowed capital for a firm is obtained by dividing the total interest paid by the company by the capital borrowed by the same company.

Cost of ownership (Equity) capital

Cost of ownership capital is more difficult to determine than that of borrowed capital. Theoretically, one knows that the cost of ownership capital is the opportunity cost of placing the owner's funds elsewhere in comparable risk situations. Generally, the guide for selecting an appropriate ownership cost of capital is to use the condition that the cost of equity or ownership capital should be equal to or greater than the cost of borrowed capital.

Average cost of capital

Using a balance sheet or other information, one can estimate the percentage of the sources of capital in a business. Assuming that a company has a 50% equity (or will average about half borrowed and half owned capital over the investment period) the average cost of capital is estimated as follows:

Table 3.2 Average cost of capital

Sources of capital	(1) % of Capital	(2) % of cost	Weighted cost (1) x (2)
Equity capital borrowed	50	0.10	5.00
Bank	40	0.09	3.60
Insurance company	10	0.08	0.80
TOTAL			9.40

Business ownership costs

There are five ownership costs that every company incurs, namely: depreciation costs, interest costs, repair costs taxes, and insurance costs. They are commonly referred to as the "DIRTI 5".

a) Depreciation

This is a procedure for allocating the used up value of durable assets over the period they are owned by the business or until they are salvaged. By depreciating an asset, an allowance is made for the deterioration in the asset's value as a result of use (wear and tear), age and obsolescence. Generally, property is depreciable if it is used in business or to earn income;, wears out, decays, gets used up or becomes obsolete and has a determinable useful life of more than one year. The proportion of the original cost to be depreciated in any one year is largely a matter of judgment and financial management. Normally, the depreciation allowance taken in any given year should reflect the actual decline in value of the asset - whether it is designed to influence income taxes or the undepreciated value of an asset reflecting the resale value of the asset.

There are four main and acceptable methods of calculating depreciation, namely:

- the accelerated cost recovery system (ACRS) method
- the straight line method
- the declining balance method
- the sum of the years-digits method.

The accelerated cost recovery system method is a relatively new method of calculating depreciation for tangible property. It came into use effectively in 1981. As a method ACRS generally gives much faster write off than other methods because it has tax savings as its primary objective. It usually gives little consideration to actual year-to-year change in value. Thus, for accounting purposes, other methods are more appropriate.

For tax purposes, property is classified as follows:-

i) *3 year property* - automobiles and light-duty trucks used for business purposes and certain special tools, and depreciable property with a midpoint life of 4 years or less.
ii) *5 year property* - most farm equipment, grain bins, single purpose structures and fences, breeding beef and dairy cattle, office equipment and office furniture.
iii) *10 year property*- includes depreciable property with an expected life between 10 and 12.4 years.
iv) *15 year property* - buildings.

The straight line method computes depreciation, Ds, as follows:

$$D_S = \frac{OC - SV}{L}$$

where:
OC = Original cost or basis
SV = Salvage value
L = expected useful life of the asset in the business.

Declining balance method calculates depreciation as:-

$$D_d = RV \times R$$

where:
RV = undepreciated value of the asset at the start of the accounting period such that, in year 1, RV = OC, and in succeeding years,
$RV_i = [RV_{i-1} - D_{d,i-1}] \times R$ (with salvage value not being deducted from original value before computing depreciation),
R = the depreciation rate, which may be up to twice the rate of decline, 1/L, allowed under straight line method.

Sum of the year-digits method estimates the depreciation of an asset as follows:-

$$D_Y = \frac{RY(OC - SV)}{S}$$

where:

RY = estimated years of useful life remaining
S = sum of the numbers representing years of useful life (i.e. for an asset with 5 years useful life, S would be 1+2+3+4+5 = 15).

b) **Interest costs (rates)** are incurred by a company when owned or borrowed funds are invested in durable assets, because such money is tied up and cannot be used for other purposes. On borrowed money, there will be a regular interest payment, a standing obligation which must be met regardless of the level of use of the asset purchased with the borrowed money. Also, an interest charge should be calculated on equity capital. In this case, the charge would be an opportunity interest cost. An annual charge should be made because the money invested has alternative productive uses, which may range from earning interest on a savings account to increasing production.

c) **Repairs costs** are principally variable costs incurred on assets because of the level of use of the assets through wear and tear. Some durable assets, however deteriorate with time even though they are not used. Fences, buildings and some moving parts on machinery and equipment are prime examples, although they deteriorate even more rapidly with use.

d) **Taxes** are fixed costs that are usually incurred on machinery, buildings and some other durable assets. Taxes are usually not related to the level of use or productive services provided. Thus, any investment analysis that ignores the annual tax obligation associated with the proposed investment will be incomplete.

e) **Insurance costs** are also fixed costs that are incurred when a financed asset is purchased and has to be protected against fire, weather, theft, etc. Usually, lenders require that a financed asset be insured as a meant of security for the loan. Some operators, particularly those with low equity, also insure some of their more valuable assets because of the strain the loss of those assets would place on the financial condition of the business. In this country, the major insurance companies are Old Mutual Insurance and General Accident Insurance, Minet Insurance, Prudential Insurance, etc. Now attempt exercise 3.5.

Key terms

Average cost

of capital
Business ownership costs
Cash
Cash equivalents
Cash flow statement
Cash payments
Cost of borrowed capital
Cost of equity capital
Depreciation
DIRTI 5
Financing
Funds use
Insurance costs
Interest rates
Investing activities
Operating activities
Pro forma cash flow statement
Repair costs
Returns on investment and servicing of finance
SORS
Source and application of funds
Strategic four-factor model
Taxation
Taxes

Chapter 4 - Budgetary control

Chapter objectives

This chapter is intended to provide:

- An indication and explanation of the importance of budgetary control in marketing as a key marketing control technique
- An overview of the advantages and disadvantages of budgeting
- An introduction to the methods for preparing budgets
- An appreciation of the uses of budgets.

There are two types of control, namely budgetary and financial. This chapter concentrates on budgetary control only. This is because financial control was covered in detail in chapters one and two. Budgetary control is defined by the Institute of Cost and Management Accountants (CIMA) as:

> "The establishment of budgets relating the responsibilities of executives to the requirements of a policy, and the continuous comparison of actual with budgeted results, either to secure by individual action the objective of that policy, or to provide a basis for its revision".

Structure of the chapter

Of all business activities, budgeting is one of the most important and, therefore, requires detailed attention. The chapter looks at the concept of responsibility centres, and the advantages and disadvantages of budgetary control. It then goes on to look at the detail of budget construction and the use to which budgets can be put. Like all management tools, the chapter highlights the need for detailed information, if the technique is to be used to its fullest advantage.

Budgetary control methods

a) Budget:

- A formal statement of the financial resources set aside for carrying out specific activities in a given period of time.
- It helps to co-ordinate the activities of the organisation.

An example would be an advertising budget or sales force budget.

b) Budgetary control:

- A control technique whereby actual results are compared with budgets.
- Any differences (variances) are made the responsibility of key individuals who can either exercise control action or revise the original budgets.

Budgetary control and responsibility centres;

These enable managers to monitor organizational functions.

A responsibility center can be defined as any functional unit headed by a manager who is responsible for the activities of that unit.

There are four types of responsibility centers:

a) *Revenue centers*

Organizational units in which outputs are measured in monetary terms but are not directly compared to input costs.

b) *Expense centers*

Units where inputs are measured in monetary terms but outputs are not.

c) *Profit centers*

Where performance is measured by the difference between revenues (outputs) and expenditure (inputs). Inter-departmental sales are often made using "transfer prices".

d) ***Investment centres***

Where outputs are compared with the assets employed in producing them, i.e. ROI.

Advantages of budgeting and budgetary control

There are a number of advantages to budgeting and budgetary control:

- Compels management to think about the future, which is probably the most important feature of a budgetary planning and control system Forces management to look ahead, to set out detailed plans for achieving the targets for each department, operation and (ideally) each manager, to anticipate and give the organisation purpose and direction.
- Promotes coordination and communication.
- Clearly defines areas of responsibility. Requires managers of budget centres to be made responsible for the achievement of budget targets for the operations under their personal control.
- Provides a basis for performance appraisal (variance analysis). A budget is basically a yardstick against which actual performance is measured and assessed. Control is provided by comparisons of actual results against budget plan. Departures from budget can then be investigated and the reasons for the differences can be divided into controllable and non-controllable factors.
- Enables remedial action to be taken as variances emerge.
- Motivates employees by participating in the setting of budgets.
- Improves the allocation of scarce resources.
- Economises management time by using the management by exception principle.

Problems in budgeting

Whilst budgets may be an essential part of any marketing activity they do have a number of disadvantages, particularly in perception terms.

- Budgets can be seen as pressure devices imposed by management, thus resulting in:
  - a) bad labour relations
  - b) inaccurate record-keeping.
- Departmental conflict arises due to:
  - a) disputes over resource allocation
  - b) departments blaming each other if targets are not attained.
- It is difficult to reconcile personal/individual and corporate goals.
- Waste may arise as managers adopt the view, "we had better spend it or we will lose it". This is often coupled with "empire building" in order to enhance the prestige of a department.

Responsibility versus controlling, i.e. some costs are under the influence of more than one person, e.g. power costs.

- Managers may overestimate costs so that they will not be blamed in the future should they overspend.

Characteristics of a budget

A good budget is characterized by the following:

- Participation: involve as many people as possible in drawing up a budget.
- Comprehensiveness: embrace the whole organization.
- Standards: base it on established standards of performance.
- Flexibility: allow for changing circumstances.
- Feedback: constantly monitor performance.
- Analysis of costs and revenues: this can be done on the basis of product lines, departments or cost centers.

Budget organization and administration:

In organizing and administering a budget system the following characteristics may apply:

a) *Budget centres:* Units responsible for the preparation of budgets. A budget centre may encompass several cost centres.

b) *Budget committee:* This may consist of senior members of the organisation, e.g. departmental heads and executives (with the managing director as chairman). Every part of the organisation should be represented on the committee, so there should be a representative from sales, production, marketing and so on. Functions of the budget committee include:

- Coordination of the preparation of budgets, including the issue of a manual
- Issuing of timetables for preparation of budgets
- Provision of information to assist budget preparations
- Comparison of actual results with budget and investigation of variances.

c) *Budget Officer:* Controls the budget administration The job involves:

- liaising between the budget committee and managers responsible for budget preparation
- dealing with budgetary control problems
- ensuring that deadlines are met
- educating people about budgetary control.

d) *Budget manual:*

This document:

- charts the organisation
- details the budget procedures
- contains account codes for items of expenditure and revenue
- timetables the process
- clearly defines the responsibility of persons involved in the budgeting system.

Budget preparation

Firstly, determine the principal budget factor. This is also known as the key budget factor or limiting budget factor and is the factor, which will limit the activities of an undertaking. This limits output, e.g. sales, material or labour.

a) Sales budget: this involves a realistic sales forecast. This is prepared in units of each product and also in sales value. Methods of sales forecasting include.

- sales force opinions
- market research
- statistical methods (correlation analysis and examination of trends)
- mathematical models.

In using these techniques consider:

- company's pricing policy
- general economic and political conditions
- changes in the population
- competition
- consumers' income and tastes
- advertising and other sales promotion techniques
- after sales service
- credit terms offered.

b) Production budget: expressed in quantitative terms only and is geared to the sales budget. The production manager's duties include:

- analysis of plant utilisation
- work-in-progress budgets.

If requirements exceed capacity he may:

- subcontract
- plan for overtime

- introduce shift work
- hire or buy additional machinery
- The materials purchases budget's both quantitative and financial.

c) Raw materials and purchasing budget:

- The materials usage budget is in quantities.
- The materials purchases budget is both quantitative and financial.

Factors influencing a) and b) include:

- production requirements
- planning stock levels
- storage space
- trends of material prices.

d) Labour budget: is both quantitative and financial. This is influenced by:

- production requirements
- man-hours available
- grades of labour required
- wage rates (union agreements)
- the need for incentives.

e) Cash budget: a cash plan for a defined period of time. It summarises monthly receipts and payments. Hence, it highlights monthly surpluses and deficits of actual cash. Its main uses are:

- to maintain control over a firm's cash requirements, e.g. stock and debtors
- to enable a firm to take precautionary measures and arrange in advance for investment and loan facilities whenever cash surpluses or deficits arises
- to show the feasibility of management's plans in cash terms
- to illustrate the financial impact of changes in management policy, e.g. change of credit terms offered to customers.

Receipts of cash may come from one of the following:

- cash sales
- payments by debtors
- the sale of fixed assets
- the issue of new shares
- the receipt of interest and dividends from investments.

Payments of cash may be for one or more of the following:

- purchase of stocks
- payments of wages or other expenses
- purchase of capital items
- payment of interest, dividends or taxation.

Steps in preparing a cash budget

i) Step 1: set out a pro forma cash budget month by month. Below is a suggested layout.

	Month 1	Month 2	Month 3
	$	$	$
Cash receipts			
Receipts from debtors			
Sales of capital items			
Loans received			
Proceeds from share issues			
Any other cash receipts			
Cash payments			
Payments to creditors			
Wages and salaries			
Loan repayments			
Capital expenditure			
Taxation			
Dividends			
Any other cash expenditure			
Receipts less payments			
Opening cash balance b/f	W	X	Y
Closing cash balance c/f	X	Y	Z

ii) Step 2: sort out cash receipts from debtors
iii) Step 3: other income
iv) Step 4: sort out cash payments to suppliers
v) Step 5: establish other cash payments in the month

Figure 4.1 shows the composition of a master budget analysis.

Figure 4.1 Composition of a master budget

OPERATING BUDGET	FINANCIAL BUDGET
consists of:-	consists of
Budget P/L acc: get:	Cash budget
Production budget	Balance sheet
Materials budget	Funds statement
Labour budget	
Admin. budget	
Stocks budget	

f) Other budgets:

These include budgets for:

- administration
- research and development
- selling and distribution expenses
- capital expenditures
- working capital (debtors and creditors).

The master budget (figure 4.1) illustrates this. Now attempt exercise 4.1.

Exercise 4.1 Budgeting I

Draw up a cash budget for *D. Sithole* showing the balance at the end of each month from the following information provided by her for the six months ended 31 December 19X2.

a) Opening Cash $ 1,200.

	2001										2002	
Sales at $20 per unit	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB
	260	200	320	290	400	300	350	400	390	400	260	250

Cash is received for sales after 3 months following the sales.

c) Production in units:	240	270	300	320	350	370	380	340	310	260	250

d) Raw materials cost $5/unit. Of this 80% is paid in the month of production and 20% after production.
e) Direct labour costs of $8/unit are payable in the month of production.
f) Variable expenses are $2/unit. Of this 50% is paid in the same month as production and 50% in the month following production.
g) Fixed expenses are $400/month payable each month.
h) Machinery costing $2,000 to be paid for in October 19X2.
i) Will receive a legacy of $ 2,500 in December 19X2.
j) Drawings to be $300/month.

An example

A sugar cane farm in the Lowveld district may devise an operating budget as follows:

- Cultivation
- Irrigation
- Field maintenance
- Harvesting
- Transportation.

With each operation, there will be costs for labour, materials and machinery usage. Therefore, for e.g. harvesting, these may include four resources, namely:

- Labour:

  -cutting
  -sundry

- Tractors
- Cane trailers
- Implements and sundries.

Having identified cost centres, the next step will be to make a quantitative calculation of the resources to be used, and to further break this down to shorter periods, say, one month or three months. The length of period chosen is important in that the shorter it is, the greater the control that can be exercised by the budget but the greater the expense in preparation of the budget and reporting of any variances.

The quantitative budget for harvesting may be calculated as shown in figure 4.2.

Figure 4.2 Quantitative harvesting budget

Harvesting	1st quarter	2nd quarter	3rd quarter	4th quarter
Labour				
Cutting	nil	9,000 tonnes	16,000 tonnes	10,000 tonnes
Sundry	nil	300 man days	450 man days	450 man days
Tractors	nil	630 hours	1,100 hours	700 hours
Cane trailers	nil	9,000 tonnes	16,000 tonnes	10,000 tonnes
Imp. & sundries	nil	9,000 tonnes	16,000 tonnes	10,000 tonnes

Each item is measured in different quantitative units - tonnes of cane, man days etc.- and depends on individual judgement of which is the best unit to use.

Once the budget in quantitative terms has been prepared, unit costs can then be allocated to the individual items to arrive at a budget for harvesting in financial terms as shown in table 4.2.

Charge out costs

In table 4.2 tractors have a unit cost of $7.50 per hour - machines like tractors have a whole range of costs like fuel and oil, repairs and maintenance, driver, licence, road tax and insurance and depreciation. Some of the costs are fixed, e.g. depreciation and insurance, whereas some vary directly with use of the tractor, e.g. fuel and oil. Other costs such as repairs are unpredictable and may be very high or low - an estimated figure based on past experience.

Figure 4.3 Harvesting cost budget

Item harvesting	Unit cost	1st quarter	2nd quarter	3rd quarter	4th quarter	Total
Labor						
Cutting	$0.75 per tonne	-	6,750	12,000	7,500	26,250
Sundry	$2.50 per day	-	750	1,125	1,125	3,000
Tractors	$7.50 per hour	-	4,725	8,250	5,250	18,225
Cane Trailers	$0.15 per tonne	-	1,350	2,400	1,500	5,250
Imp. & sundries	$0.25 per tonne	-	2,250	4,000	2,500	8,750
		-	$15,825	$27,775	$17,875	$61,475

So, overall operating cost of the tractor for the year may be budgeted as shown in figure 4.4.

If the tractor is used for more than 1,000 hours then there will be an over-recovery on its operational costs and if used for less than 1,000 hours there will be under-recovery, i.e. in the first instance making an internal 'profit' and in the second a 'loss'.

Figure 4.4 Tractor costs

		Unit rate	Cost per annum (1,000 hours)
		($)	($)
Fixed costs	Depreciation	2,000.00	2,000.00
	Licence and insurance	200.00	200.00
	Driver	100.00 per month	1,200.00
	Repairs	600.00 per annum	600.00
Variable costs	Fuel and oil	2.00 per hour	2,000.00
	Maintenance	3.00 per 200 hours	1,500.00
			7,500.00
	No. of hours used		1,000.00
	Cost per hour		7.50

Master budget

The master budget for the sugar cane farm may be as shown in figure 4.5. The budget represents an overall objective for the farm for the whole year ahead, expressed in financial terms.

Table 4.5 Operating budget for sugar cane farm 19X4

	1st quarter	2nd quarter	3rd quarter	4th quarter	Total $
Revenue from cane		130,000	250,000	120,000	500,000
Less: Costs					
Cultivation	37,261	48,268	42,368	55,416	183,313
Irrigation	7,278	15,297	18,473	11,329	52,377
Field maintenance	4,826	12,923	15,991	7,262	41,002
Harvesting	-	15,825	27,775	17,875	61,475
Transportation	-	14,100	24,750	15,750	54,600
	49,365	106,413	129,357	107,632	392,767
Add: Opening valuation	85,800	135,165	112,240	94,260	85,800
	135,165	241,578	241,597	201,892	478,567
Less: Closing valuation	135,165	112,240	94,260	90,290	90,290
Net crop cost	-	129,338	147,337	111,602	388,277
Gross surplus	-	66,200	102,663	8,398	111,723
Less: Overheads	5,876	7,361	7,486	5,321	26,044
Net profitless)	(5,876)	(6,699)	95,177	3,077	85,679

Once the operating budget has been prepared, two further budgets can be done, namely:

i. Balance sheet at the end of the year.
ii. Cash flow budget which shows the amount of cash necessary to support the operating budget. It is of great importance that the business has sufficient funds to support the planned operational budget.

Reporting back

During the year the management accountant will prepare statements, as quickly as possible after each operating period, in our example, each quarter, setting out the actual operating costs against the budgeted costs. This statement will calculate the difference between the 'budgeted' and the 'actual' cost, which is called the 'variance'.

There are many ways in which management accounts can be prepared. To continue with our example of harvesting on the sugar cane farm, management accounts at the end of the third quarter can be presented as shown in figure 4.6.

Figure 4.6 Management accounts - actual costs against budget costs
Management accounts for sugar cane farm 3rd quarter 19X4

	3rd quarter			Year to date		
	Actual	Budget	Variance	Actual	Budget	Variance
Item Harvesting						
Labour						
- Cutting	12,200	12,000	(200)	19,060	18,750	(310)
- Sundry	742	1,125	383	1,584	1,875	291
Tractors	9,375	8,250	(1,125)	13,500	12,975	(525)
Cane trailers	1,678	2,400	722	2,505	3,750	1,245
Imp & sundries	4,270	4,000	(270)	6,513	6,250	(263)
	28,265	27,775	(490)	43,162	43,600	438

Here, actual harvesting costs for the 3rd quarter are $28,265 against a budget of $27,775 indicating an increase of $490 whilst the cumulative figure for the year to date shows an overall saving of $438. It appears that actual costs are less than budgeted costs, so the harvesting operations are proceeding within the budget set and satisfactory. However, a further look may reveal that this may not be the case The budget was based on a cane tonnage cut of 16,000 tonnes in the 3rd quarter and a cumulative tonnage of 25,000. If these tonnages have been achieved then the statement will be satisfactory. If the actual production was much higher than budgeted then these costs represent a very considerable saving, even though only a marginal saving is shown by the variance. Similarly, if the actual tonnage was significantly less than budgeted, then what is indicated as a marginal saving in the variance may, in fact, be a considerable overspending.

Price and quantity variances

Just to state that there is a variance on a particular item of expenditure does not really mean a lot. Most costs are composed of two elements - the quantity used and the price per unit. A variance between the actual cost of an item and its budgeted cost may be due to one or both of these factors. Apparent similarity between budgeted and actual costs may hide significant compensating variances between price and usage.

For example, say it is budgeted to take 300 man days at $3.00 per man day - giving a total budgeted cost of $900.00. The actual cost on completion was $875.00, showing a saving of $25.00. Further investigations may reveal that the job took 250 man days at a daily rate of $3.50 - a favourable usage variance but a very unfavourable price variance. Management may therefore need to investigate some significant variances revealed by further analysis, which a comparison of the total costs would not have revealed. Price and usage variances for major items of expense are discussed below

Labour

The difference between actual labour costs and budgeted or standard labour costs is known as direct wages variance. This variance may arise due to a difference in the amount of labour used or the price per unit of labour, i.e. the wage rate. The direct wages variance can be split into:

i) Wage rate variance: the wage rate was higher or lower than budgeted, e.g. using more unskilled labor, or working overtime at a higher rate.

ii) Labor efficiency variance: arises when the actual time spent on a particular job is higher or lower than the standard labor hours specified, e.g. breakdown of a machine.

Materials

The variance for materials cost could also be split into price and usage elements

i) Material price variance: arises when the actual unit price is greater or lower than budgeted. Could be due to inflation, discounts, alternative suppliers etc

ii) Material quantity variance: arises when the actual amount of material used is greater or lower than the amount specified in the budget, e.g. a budgeted fertiliser at 350 kg per hectare may be increased or decreased when the actual fertiliser is applied, giving rise to a usage variance.

Overheads

Again, overhead variance can be split into:

i) Overhead volume variance: where overheads are taken into the cost centres, a production higher or lower than budgeted will cause an over-or under-absorption of overheads.

ii) Overhead expenditure variance: where the actual overhead expenditure is higher or lower than that budgeted for the level of output actually produced.

Calculation of price and usage variances

The price and usage variance are calculated as follows:

Price variance = (budgeted price - actual price) X actual quantity
Usage variance = (budgeted quantity - actual quantity) X budgeted price

Now attempt exercise 4.2.

Exercise 4.2 Computation of labour variances

It was budgeted that it would take 200 man days at $10.00 per day to complete the task costing $2,000.00 when the actual cost was $1,875.00, being 150 man days at $12.50 per day. Calculate:

i) Price variance
ii) Usage variance

Comment briefly on the results of your calculation.

Management action and cost control

Producing information in management accounting form is expensive in terms of the time and effort involved. It will be very wasteful if the information once produced is not put into effective use.

There are five parts to an effective cost control system. These are:

a) preparation of budgets
b) communicating and agreeing budgets with all concerned
c) having an accounting system that will record all actual costs
d) preparing statements that will compare actual costs with budgets, showing any variances and disclosing the reasons for them, and
e) taking any appropriate action based on the analysis of the variances in d) above.

Action(s) that can be taken when a significant variance has been revealed will depend on the nature of the variance itself. Some variances can be identified to a specific department and it is within that department's control to take corrective action Other variances might prove to be much more difficult, and sometimes impossible to control.

Variances revealed are historic. They show what happened last month or last quarter and no amount of analysis and discussion can alter that. However, they can be used to influence managerial action in future periods.

Zero base budgeting (ZBB)

After a budgeting system has been in operation for some time, there is a tendency for next year's budget to be justified by reference to the actual levels being achieved at present. In fact this is part of the financial analysis discussed so far, but the proper analysis process takes into account all the changes which should affect the future activities of the company. Even using such an analytical base, some businesses find that historical comparisons, and particularly the current level of constraints on resources, can inhibit really innovative changes in budgets. This can cause a severe handicap for the business because the budget should be the first year of the long range plan. Thus, if changes are not started in the budget period, it will be difficult for the business to make the progress necessary to achieve longer term objectives

One way of breaking out of this cyclical budgeting problem is to go back to basics and develop the budget from an assumption of no existing resources (that is, a zero base). This means all resources will have to be justified and the chosen way of achieving any specified objectives will have to be compared with the alternatives For example, in the sales area, the current existing field sales force will be ignored, and the optimum way of achieving the sales objectives in that particular market for the particular goods or services should be developed. This might not include any field sales force, or a different-sized team, and the company then has to plan how to implement this new strategy.

The obvious problem of this zero-base budgeting process is the massive amount of managerial time needed to carry out the exercise. Hence, some companies carry out the full process every five years, but in that year the business can almost grind to a halt. Thus, an alternative way is to look in depth at one area of the business each year on a rolling basis, so that each sector does a zero base budget every five years or so.

Key terms

Budgeting
Budgetary control
Budget preparation
Management action and cost control
budgeting
Master budget
Price and quantity variance
Responsibility centres
Zero based

Chapter 5 - Information for decision making

Chapter objectives

This chapter is intended to provide:

- An overview of the elements required for manager to make informed decisions among alternative courses of action
- An explanation of the relevant costs for decision making purposes
- The construction of Cost-Volume-Profit analyses and Breakeven charts and their usefulness in decision making
- The factors affecting the economic choice of whether to make components in-house or buy from outside
- How to make decisions on shutdown, additions or deletions to product lines or ranges, important to marketing managers.

The need for a decision arises in business because a manager is faced with a problem and alternative courses of action are available. In deciding which option to choose he will need all the information which is relevant to his decision; and he must have some criterion on the basis of which he can choose the best alternative. Some of the factors affecting the decision may not be expressed in monetary value. Hence, the manager will have to make 'qualitative' judgements, e.g. in deciding which of two personnel should be promoted to a managerial position. A 'quantitative' decision, on the other hand, is possible when the various factors, and relationships between them are measurable. This chapter will concentrate on quantitative decisions based on data expressed in monetary value and relating to costs and revenues as measured by the management accountant.

Structure of the chapter

Often "information" is interpreted by marketers as being "external" market based information. However, "internal" sources are just as important, none more so than financial information. The chapter looks at the relevant elements of cost for decision making, then looks at the various techniques including breakeven analysis. Other important business decisions are whether to source components internally or have them brought in from outside, and whether to continue with operations if they appear uneconomic. The chapter examines the techniques useful in helping to make decisions in these areas.

Elements of a decision

A quantitative decision problem involves six parts:

a) **An objective that can be quantified** Sometimes referred to as 'choice criterion' or 'objective function', e.g. maximisation of profit or minimisation of total costs.

b) **Constraints** Many decision problems have one or more constraints, e.g. limited raw materials, labour, etc. It is therefore common to find an objective that will maximise profits subject to defined constraints.

c) **A range of alternative courses of action** under consideration. For example, in order to minimise costs of a manufacturing operation, the available alternatives may be:

i) to continue manufacturing as at present
ii) to change the manufacturing method
iii) to sub-contract the work to a third party.

d) **Forecasting** of the incremental costs and benefits of each alternative course of action.

e) **Application** of the decision criteria or objective function, e.g. the calculation of expected profit or contribution, and the ranking of alternatives.

f) **Choice** of preferred alternatives.

Relevant costs for decision making

The costs which should be used for decision making are often referred to as "relevant costs". CIMA defines relevant costs as 'costs appropriate to aiding the making of specific management decisions'.

To affect a decision a cost must be:

a) Future: Past costs are irrelevant, as we cannot affect them by current decisions and they are common to all alternatives that we may choose.
b) Incremental: ' Meaning, expenditure which will be incurred or avoided as a result of making a decision. Any costs which would be incurred whether or not the decision is made are not said to be incremental to the decision.
c) Cash flow: Expenses such as depreciation are not cash flows and are therefore not relevant. Similarly, the book value of existing equipment is irrelevant, but the disposal value is relevant.

Other terms:

d) Common costs: Costs which will be identical for all alternatives are irrelevant, e.g. rent or rates on a factory would be incurred whatever products are produced.
e) Sunk costs: Another name for past costs, which are always irrelevant, e.g. dedicated fixed assets, development costs already incurred.
f) Committed costs: A future cash outflow that will be incurred anyway, whatever decision is taken now, e.g. contracts already entered into which cannot be altered.

Opportunity cost

Relevant costs may also be expressed as opportunity costs. An opportunity cost is the benefit foregone by choosing one opportunity instead of the next best alternative.

Example

A company is considering publishing a limited edition book bound in a special leather. It has in stock the leather bought some years ago for $1,000. To buy an equivalent quantity now would cost $2,000. The company has no plans to use the leather for other purposes, although it has considered the possibilities:

a) of using it to cover desk furnishings, in replacement for other material which could cost $900
b) b) of selling it if a buyer could be found (the proceeds are unlikely to exceed $800).

In calculating the likely profit from the proposed book before deciding to go ahead with the project, the leather would *not* be costed at $1,000. The cost was incurred in the past for some reason which is no longer relevant. The leather exists and could be used on the book without incurring any specific cost in doing so. In using the leather on the book, however, the company will lose the opportunities of either disposing of it for $800 or of using it to save an outlay of $900 on desk furnishings.

The better of these alternatives, from the point of view of benefiting from the leather, is the latter. "Lost opportunity" cost of $900 will therefore be included in the cost of the book for decision making purposes.

The relevant costs for decision purposes will be the sum of:

i) 'avoidable outlay costs', i.e. those costs which will be incurred only if the book project is approved, and will be avoided if it is not
ii) ii) the opportunity cost of the leather (not represented by any outlay cost in connection to the project).

This total is a true representation of 'economic cost'.

Now attempt exercise 5.1.

Exercise 5.1 Relevant costs and opportunity costs

Zimglass Industries Ltd. has been approached by a customer who would like a special job to be done for him, and is willing to pay $60,000 for it. The job would require the following materials.

Material	Total units required	Units already in stock	Book value of units in stock $/unit	Realisable value $/unit	Replacement cost $/unit
A	1000	0	-	-	16.00
B	1000	600	12.00	12.50	15.00
C	1000	700	13.00	12.50	14.00
D	200	200	14.00	16.00	19.00

a) Material B is used regularly by Zimglass Industries Ltd, and if units of B are required for this job, they would need to be replaced to meet other production demands.

b) Materials C and D are in stock due to previous over-buying, and they have restricted use. No other use could be found for material C, but the units of material D could be used in another job as a substitute for 300 units of

material E, which currently costs $15 per unit (of which the company has no units in stock at the moment).

Calculate the relevant costs of material for deciding whether or not to accept the contract. You must carefully and clearly explain the reasons for your treatment of each material.

The assumptions in relevant costing

Some of the assumptions made in relevant costing are as follows:

a) Cost behaviour patterns are known, e.g. if a department closes down the attributable fixed cost savings would be known.
b) The amount of fixed costs, unit variable costs, sales price and sales demand are known with certainty.
c) The objective of decision making in the short run is to maximise 'satisfaction', which is often known as 'short-term profit'.
d) The information on which a decision is based is complete and reliable.

Cost-volume-profit (CVP) analysis

CVP analysis involves the analysis of how total costs, total revenues and total profits are related to sales volume, and is therefore concerned with predicting the effects of changes in costs and sales volume on profit. It is also known as 'breakeven analysis'.

The technique used carefully may be helpful in the following situations:

a) Budget planning. The volume of sales required to make a profit (breakeven point) and the 'safety margin' for profits in the budget can be measured.
b) Pricing and sales volume decisions.
c) Sales mix decisions, to determine in what proportions each product should be sold.
d) Decisions that will affect the cost structure and production capacity of the company.

The basic principles of CVP analysis

CVP analysis is based on the assumption of a linear total cost function (constant unit variable cost and constant fixed costs) and so is an application of marginal costing principles.

The principles of marginal costing can be summarized as follows:

a) Period fixed costs are a constant amount, therefore if one extra unit of product is made and sold, total costs will only rise by the variable cost (the *marginal cost*) of production and sales for that unit.
b) Also, total costs will fall by the variable cost per unit for each reduction by one unit in the level of activity.
c) The additional profit earned by making and selling one extra unit is the extra revenue from its sales minus its variable costs, i.e. the contribution per unit.
d) As the volume of activity increases, there will be an increase in total profits (or a reduction in losses) equal to the total revenue minus the total extra variable costs. This is the extra contribution from the extra output and sales.

e) The total profit in a period is the total revenue minus the total variable cost of goods sold, minus the fixed costs of the period.

Revenue	X
Variable cost of sales	(X)
CONTRIBUTION	X
Fixed Costs	(X)
PROFIT	X

Example: breakeven charts and P/V charts

Sabre Products Ltd. makes and sells a single product. The variable cost is $3/unit and the variable cost of selling is $1/unit. Fixed costs total $6,000 and the unit sales price is $6.

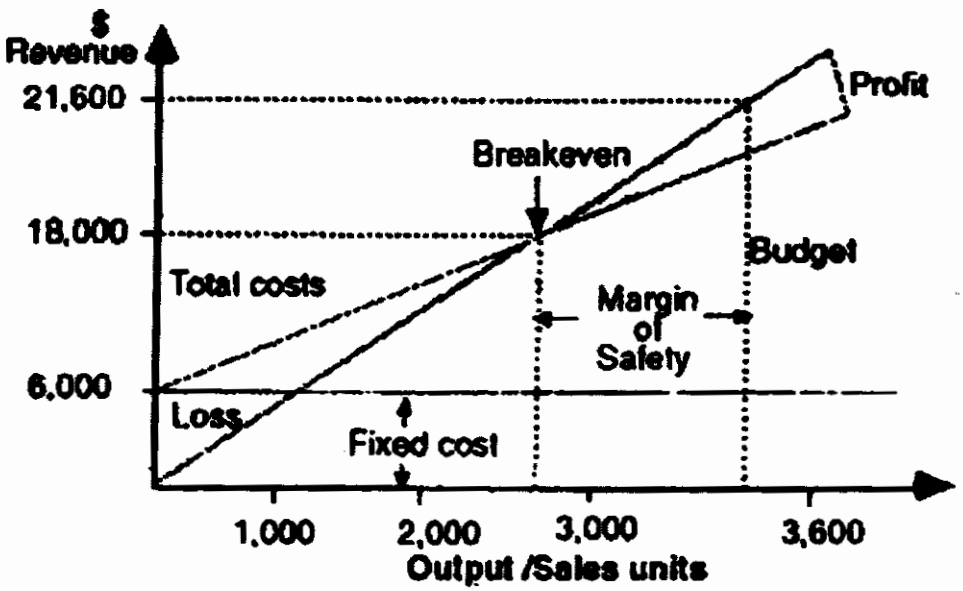
Sabre Products Ltd. budgets to make and sell 3,600 units in the next year.

Draw a breakeven chart, and a P/V graph, each showing the expected amount of output and sales required to breakeven, and the safety margin in the budget.

Solution:

A breakeven chart records the amount of fixed costs, variable costs, total costs and total revenue at all volumes of sales, and at a given sales price as follows:

Figure 5.1 Breakeven chart



The 'breakeven point' is where revenues and total costs are exactly the same, so there is no profit or loss. It may be expressed in terms of units of sale or in terms of sales revenue. Reading from the graph, the breakeven point is 3,000 units of sale and $18,000 in sales revenue.

The 'margin of safety' is the amount which actual output/sales may fall short of the budget without a loss being made, often expressed as a percentage of the budgeted sales volume. It is a rough measure of the risk that Sabre Products might make a loss if

it fails to achieve its budget. In our example, the margin of safety is calculated as follows:

	Units
Budgeted sales	3,600
Breakeven point	3,000
Margin of safety (MOS)	600

As a percentage of budgeted sales; the

$$MOS = \frac{600}{3,600}$$

= 16.67%.

A high margin of safety shows a good expectation of profits, even if the budget is not achieved.

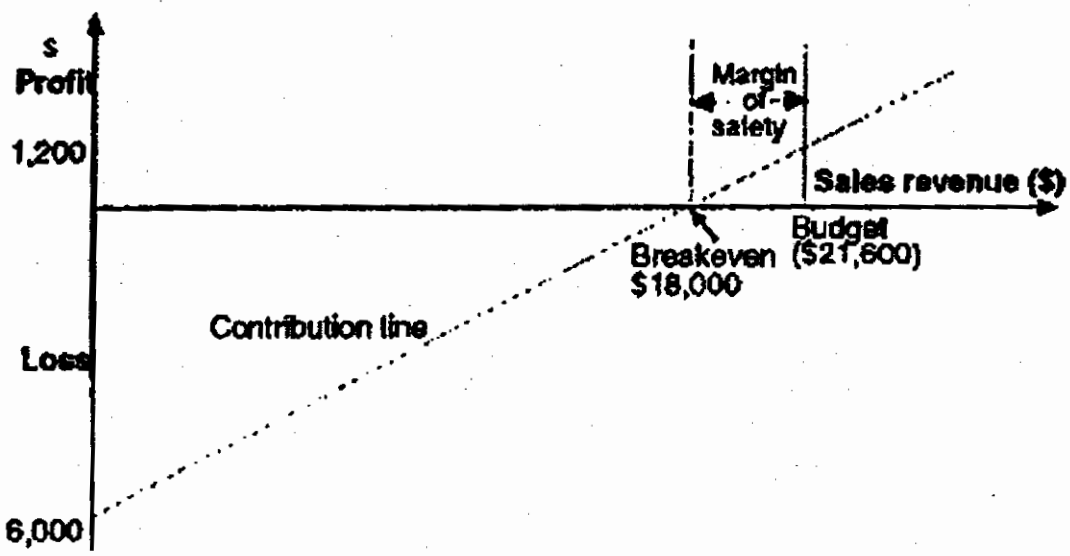
The Profit/Volume (P/V) graph

The P/V graph is similar to the breakeven chart, and records the profit or loss at each level of sales, at a given sales price. It is a straight line graph, drawn by recording the following:

i) the loss at zero sales, which is the full amount of fixed costs
ii) the profit/(loss) at the budgeted sales level.

The two points are then joined up. In our example above, the PA/graph would look like this:

Figure 5.2 The profit/volume (P/V) graph



The breakeven point may be read from the graph as $18,000 in sales revenue, and the margin of safety is $3,600 in sales revenue or 16.67% budgeted sales revenue.

The arithmetic of CVP analysis

a) To calculate the breakeven point the following formula applies:

$$S = V + F \text{ at the breakeven point,}$$

where:

S = sales revenue
V = variable costs
F = fixed costs (so that V + F = total costs).

Therefore:

$$(S - V) = F$$

At the breakeven point, total contribution (S - V) equals the amount of fixed costs (F).

b) To calculate the amount of sales needed to achieve a target profit the following formula applies:

$$S = V + F + P$$

Therefore,

$$(S - V) = (F + P)$$

To earn a target profit, the total contribution (S - V) must be sufficient to cover fixed costs plus the amount of profit required (F + P).

Now attempt exercise 5.2.

Exercise 5.2 Arithmetic of CVP analysis

Ndlovu Ltd. manufactures a single product, which has a variable cost of sale of $8/unit and a sales price of $12/unit. Budgeted fixed costs are $24,000.

Required:

Calculate the volume of sales that would be required to achieve the following:

a) Breakeven
b) Earn a profit of at least $6,000.

The contribution/sales ratio (C/S ratio)

The C/S ratio shows how much contribution is earned per $1 of sales revenue earned. Since costs and sales revenues are linear functions, the C/S ratio is constant at all levels of output and sales. It is used sometimes as a measure of performance or profitability, and in CVP analysis to calculate the sales required to breakeven or earn a

target profit or the expected total contribution at a given volume of sales and with a given C/S ratio.

As an alternative method of calculation, the breakeven point in sales revenue is calculated as follows:

$$\frac{\textit{Required contribution}}{C/S\,ratio} = \frac{\textit{Fixed costs}}{C/S\,ratio}$$

Similarly, the sales volume needed to achieve a target profit is calculated as follows:

$$\frac{\textit{Required contribution}}{C/S\,ratio} = \frac{\textit{Fixed costs} + \textit{profit}}{C/S\,ratio}$$

In exercise 5.2, the C/S ratio is

$$\frac{\$4}{\$12} \text{ or } 33\frac{1}{3}\%$$

a) The breakeven point is therefore

$$\frac{\text{Required contribution}}{C/S\,ratio} = \frac{\$24{,}000}{33\tfrac{1}{3}\%}$$

Required sales to breakeven

= $72,000 or divided by $12 = 6,000 units

b) To achieve a target profit of $6,000 the required sales are calculated as;

$$\frac{\text{Required contribution}}{C/S\,ratio} = \frac{\$30{,}000}{33\tfrac{1}{3}\%}$$

= $90,000
or divided by 12
= 7,500 units

Make or buy decisions

A company is often faced with the decision as to whether it should manufacture a component or buy it outside.

Suppose for example, that *Masanzu Ltd.* make four components, W, X, Y and Z, with expected costs for the coming year as follows:

	W	X	Y	Z
Production (units)	1,000	2,000	4,000	3,000
Unit marginal costs	$	$	$	$
Direct materials	4	5	2	4
Direct labour	8	9	4	6
Variable production overheads	2	3	1	2
	14	17	7	12

Direct fixed costs/annum and committed fixed costs are as follows:

Incurred as a direct consequence of making W	1,000
Incurred as a direct consequence of making X	5,000
Incurred as a direct consequence of making Y	6,000
Incurred as a direct consequence of making Z	8,000
Other committed fixed costs	30,000
	50,000

A subcontractor has offered to supply units W, X, Y and Z for $12, $21, $10 and $14 respectively.

Decide whether *Masanzu* Ltd. should make or buy the components.

Solution and discussion

a) The relevant costs are the differential costs between making and buying They consist of differences in unit variable costs plus differences in directly attributable fixed costs. Subcontracting will result in some savings on fixed cost.

	W	X	Y	Z
	$	$	$	$
Unit variable cost of making	14	17	7	12
Unit variable cost of buying	12	21	10	14
	(2)	-4	2	2
Annual requirements in units	1,000	2,000	4,000	3,000
Extra variable cost of buying per annum	(2,000)	8,000	12,000	6,000
Fixed cost saved by buying	1,000	5,000	6,000	8,000
Extra total cost of buying	(3,000)	3,000	6,000	(2,000)

b) The company would save $3,000/annum by sub-contracting component W, and $2,000/annum by sub-contracting component Z.

c) In this example, relevant costs are the variable costs of in-house manufacture, the variable costs of sub-contracted units, and the saving in fixed costs.

d) Other important considerations are as follows:

i) If components W and Z are sub-contracted, the company will have spare capacity. How should that spare capacity be profitably used? Are there hidden benefits to be obtained from sub-contracting? Will there be resentment from the workforce?

ii) Would the sub-contractor be reliable with delivery times, and is the quality the same as those manufactured internally?
iii) Does the company wish to be flexible and maintain better control over operations by making everything itself?
iv) Are the estimates of fixed costs savings reliable? In the case of product W, buying is clearly cheaper than making in-house. However, for product Z, the decision to buy rather than make would only be financially attractive if the fixed cost savings of $8,000 could be delivered by management. In practice, this may not materialise.

Now attempt exercise 5.3.

Exercise 5.3 Make or buy

The Pip, a component used by *Goya Manufacturing Ltd.*, is incorporated into a number of its completed products. The Pip is purchased from a supplier at $2.50 per component and some 20,000 are used annually in production.

The price of $2.50 is considered to be competitive, and the supplier has maintained good quality service over the last five years. The production engineering department at Goya Manufacturing Ltd. has submitted a proposal to manufacture the Pip in-house. The variable cost per unit produced is estimated at $1.20 and additional annual fixed costs that would be incurred if the Pip were manufactured are estimated at $20,800.

a) Determine whether Goya Manufacturing Ltd. should continue to purchase the Pip or manufacture it in-house.

b) Indicate the level of production required that would make Goya Manufacturing Ltd. decide in favour of manufacturing the Pip itself.

Shutdown problems

Shutdown problems involve the following types of decisions:

a) Whether or not to close down a factory, department, product line or other activity, either because it is making losses or because it is too expensive to run.
b) If the decision is to shut down, whether the closure should be permanent or temporary. Shutdown decisions often involve long term considerations, and capital expenditures and revenues.
c) A shutdown should result in savings in annual operating costs for a number of years in the future.
d) Closure results in release of some fixed assets for sale. Some assets might have a small scrap value, but others, e.g. property, might have a substantial sale value.
e) Employees affected by the closure must be made redundant or relocated, perhaps even offered early retirement. There will be lump sums payments involved which must be taken into consideration. For example, suppose closure of a regional office results in annual savings of $100,000, fixed assets sold off for $2 million, but redundancy payments would be $3 million. The shutdown decision would involve an assessment of the net capital cost of closure ($1 million) against the annual benefits ($100,000 per annum).

It is possible for shutdown problems to be simplified into short run decisions, by making one of the following assumptions

a) Fixed asset sales and redundancy costs would be negligible.
b) Income from fixed asset sales would match redundancy costs and so these items would be self-cancelling.

In these circumstances the financial aspects of shutdown decisions would be based on short run relevant costs.

Now attempt exercise 5.4.

Exercise 5.4 Adding or deleting products

Brass Ltd. manufactures three products, Swans, Ducks and Chicks. The present net annual income from each item is as follows:

	Swans	Ducks	Chicks	Total
	$	$	$	$
Sales	50,000	40,000	60,000	150,000
Variable costs	30,000	25,000	35,000	90,000
Contribution	20,000	15,000	25,000	60,000
Fixed costs	17,000	18,000	20,000	55,000
Profit/(loss)	3,000	(3,000)	5,000	5,000

Brass Ltd. is concerned about its poor profit performance, and is considering whether or not to cease selling Ducks. It is felt that selling prices cannot be increased or lowered without adversely affecting net income. $5,000 of the fixed costs of Ducks are direct fixed costs which would be saved if production ceased. All other fixed costs will remain the same.

a) Advise Brass Ltd. whether or not to cease production of Ducks.
b) Suppose, however, it were possible to use the resources realised by stopping production of Ducks, and switch to produce a new item, Eagles, which would sell for $50,000 and incur variable costs of $30,000 and extra fixed costs of $6,000. What will the new decision be?

Key terms

Breakeven analysis
Contribution/sales ratio
Cost-volume-profit analysis
Decision making
Make or buy decisions
Opportunity costs
Profit-volume charts
Relevant costs
Shutdown

Chapter 6 - Investment decisions - Capital budgeting

Chapter objectives

This chapter is intended to provide:

- An understanding of the importance of capital budgeting in marketing decision making
- An explanation of the different types of investment project
- An introduction to the economic evaluation of investment proposals
- The importance of the concept and calculation of net present value and internal rate of return in decision making
- The advantages and disadvantages of the payback method as a technique for initial screening of two or more competing projects.

Capital budgeting is vital in marketing decisions. Decisions on investment, which take time to mature, have to be based on the returns which that investment will make. Unless the project is for social reasons only, if the investment is unprofitable in the long run, it is unwise to invest in it now.

Often, it would be good to know what the present value of the future investment is or how long it will take to mature (give returns). It could be much more profitable putting the planned investment money in the bank and earning interest, or investing in an alternative project.

Typical investment decisions include the decision to build another grain silo, cotton gin or cold store or invest in a new distribution depot. At a lower level, marketers may wish to evaluate whether to spend more on advertising or increase the sales force, although it is difficult to measure the sales to advertising ratio.

Structure of the chapter

Capital budgeting is very obviously a vital activity in business. Vast sums of money can be easily wasted if the investment turns out to be wrong or uneconomic. The subject matter is difficult to grasp by nature of the topic covered and also because of the mathematical content involved. However, it seeks to build on the concept of the future value of money which may be spent now. It does this by examining the techniques of net present value, internal rate of return and annuities. The timing of cash flows are important in new investment decisions and so the chapter looks at this "payback" concept. One problem which plagues developing countries is "inflation rates" which can, in some cases, exceed 100% per annum. The chapter ends by showing how marketers can take this in to account.

Capital budgeting versus current expenditures

A capital investment project can be distinguished from current expenditures by two features:

a) such projects are relatively large
b) a significant period of time (more than one year) elapses between the investment outlay and the receipt of the benefits..

As a result, most medium-sized and large organisations have developed special procedures and methods for dealing with these decisions. A systematic approach to capital budgeting implies:

a) the formulation of long-term goals
b) the creative search for and identification of new investment opportunities
c) classification of projects and recognition of economically and/or statistically dependent proposals
d) the estimation and forecasting of current and future cash flows
e) a suitable administrative framework capable of transferring the required information to the decision level
f) the controlling of expenditures and careful monitoring of crucial aspects of project execution
g) a set of decision rules which can differentiate acceptable from unacceptable alternatives is required.

The last point (g) is crucial and this is the subject of later sections of the chapter.

The classification of investment projects

a) By project size

Small projects may be approved by departmental managers. More careful analysis and Board of Directors' approval is needed for large projects of, say, half a million dollars or more.

b) By type of benefit to the firm

- an increase in cash flow
- a decrease in risk
- an indirect benefit (showers for workers, etc).

c) By degree of dependence

- mutually exclusive projects (can execute project A or B, but not both)
- complementary projects: taking project A increases the cash flow of project B.
- substitute projects: taking project A decreases the cash flow of project B.

d) By degree of statistical dependence

- Positive dependence
- Negative dependence
- Statistical independence.

e) By type of cash flow

- Conventional cash flow: only one change in the cash flow sign

e.g. -/++++ or +/----, etc

- Non-conventional cash flows: more than one change in the cash flow sign.

e.g. +/-/+++ or -/+/-/++++, etc.

The economic evaluation of investment proposals

The analysis stipulates a decision rule for:

I) accepting or
II) rejecting

investment projects

The time value of money

Recall that the interaction of lenders with borrowers sets an equilibrium rate of interest. Borrowing is only worthwhile if the return on the loan exceeds the cost of the borrowed funds. Lending is only worthwhile if the return is at least equal to that which can be obtained from alternative opportunities in the same risk class.

The interest rate received by the lender is made up of:

i) The time value of money: the receipt of money is preferred sooner rather than later. Money can be used to earn more money. The earlier the money is received, the greater the potential for increasing wealth. Thus, to forego the use of money, you must get some compensation.

ii) The risk of the capital sum not being repaid. This uncertainty requires a premium as a hedge against the risk, hence the return must be commensurate with the risk being undertaken.

iii) Inflation: money may lose its purchasing power over time. The lender must be compensated for the declining spending/purchasing power of money. If the lender receives no compensation, he/she will be worse off when the loan is repaid than at the time of lending the money.

a) Future values/compound interest

Future value (FV) is the value in dollars at some point in the future of one or more investments.

FV consists of:

i) the original sum of money invested, and
ii) the return in the form of interest.

The general formula for computing Future Value is as follows:

$$FV_n = V_o (1 + r)^n$$

where

V_o is the initial sum invested
r is the interest rate
n is the number of periods for which the investment is to receive interest.

Thus we can compute the future value of what V_o will accumulate to in n years when it is compounded annually at the same rate of r by using the above formula

Now attempt exercise 6.1.

Exercise 6.1 Future values/compound interest

i) What is the future value of $10 invested at 10% at the end of 1 year?
ii) What is the future value of $10 invested at 10% at the end of 5 years?

We can derive the Present Value (PV) by using the formula:

$$FV_n = V_o (1 + r)^n$$

By denoting V_o by PV we obtain:

$$FV_n = PV (1 + r)^n$$

by dividing both sides of the formula by $(1 + r)^n$ we derive:

$$PV = \frac{FV_n}{(1+r)^n}$$

Rationale for the formula:

As you will see from the following exercise, given the alternative of earning 10% on his money, an individual (or firm) should never offer (invest) more than $10.00 to obtain $11.00 with certainty at the end of the year.

Now attempt exercise 6.2

Exercise 6.2 Present value

i) What is the present value of $11.00 at the end of one year?
ii) What is the PV of $16.10 at the end of 5 years?

b) Net present value (NPV)

The NPV method is used for evaluating the desirability of investments or projects

$$NPV = \frac{C_1}{I+r} + \frac{C_2}{(I+r)^2} + \frac{C_3}{(I+r)^3} + \ldots + \frac{C_2 \quad I_o}{(I+r)^n}$$

$$NPV = \sum_{t=1}^{n} \frac{C_t}{(1+r)^t} - I_o$$

where:

C_t = the net cash receipt at the end of year t
I_o = the initial investment outlay
r = the discount rate/the required minimum rate of return on investment
n = the project/investment's duration in years.

The discount factor r can be calculated using:

$$q(t,i) = \frac{1}{(1+i)^t}$$

Examples:

$$q(1,10\%) = \frac{1}{1.1} = 0.9091$$

$$q(2,10\%) = \frac{1}{(1.1)^2} = 0.8264$$

$$q(3,10\%) = \frac{1}{(1.1)^3} = 0.7513$$

N.B. At this point the tutor should introduce the net present value tables from any recognised published source. Do that now.

Decision rule:

If NPV is positive (+): *accept the project*
If NPV is negative(-): *reject the project*

Now attempt exercise 6.3.

Exercise 6.3 Net present value

A firm intends to invest $1,000 in a project that generated net receipts of $800, $900 and $600 in the first, second and third years respectively. Should the firm go ahead with the project?

Attempt the calculation without reference to net present value tables first.

c) **Annuities**

N.B. Introduce students to annuity tables from any recognized published source.

A set of cash flows that are equal in each and every period is called an annuity.

Example:

Year	Cash Flow ($)
0	-800
1	400
2	400
3	400

PV = $400(0.9091) + $400(0.8264) + $400(0.7513)
= $363.64 + $330.56 + $300.52
= $994.72
NPV = $994.72 - $800.00
= $194.72

Alternatively,

PV of an annuity = $400 (PVFAt.i) (3,0,10)
= $400 (0.9091 + 0.8264 + 0.7513)
= $400 x 2.4868
= $994.72
NPV = $994.72 - $800.00
= $194.72

d) Perpetuities

A perpetuity is an annuity with an infinite life. It is an equal sum of money to be paid in each period forever.

$$\text{PV of a perpetuity} = \frac{C}{r}$$

where:

C is the sum to be received per period
r is the discount rate or interest rate

Example:

You are promised a perpetuity of $700 per year at a rate of interest of 15% per annum. What price (PV) should you be willing to pay for this income?

$$PV = \frac{\$700}{015}$$
= $4,666.67

A perpetuity with growth:

Suppose that the $700 annual income most recently received is expected to grow by a rate G of 5% per year (compounded) forever. How much would this income be worth when discounted at 15%?

Solution:

Subtract the growth rate from the discount rate and treat the first period's cash flow as a perpetuity.

$$PV = \frac{C(1+G)}{R-G}$$
$$= \frac{\$700(1+0.05)}{0.15-0.05}$$
$$= \frac{\$700(1.05)}{0.10}$$
$$= \$735/0.10$$
$$= \underline{\$7,350}$$

e) The internal rate of return (IRR)

Refer students to the tables in any recognized published source.

- The IRR is the discount rate at which the NPV for a project equals zero. This rate means that the present value of the cash inflows for the project would equal the present value of its outflows.
- The IRR is the break-even discount rate.
- The IRR is found by trial and error.

$$\sum_{t=1}^{n} \frac{C_t}{(1+r)^t} - I_o = 0 \quad \textit{where } r = IRR$$

IRR of an annuity:

$$Q(n,r) = \frac{I_o}{C}$$

where:

Q (n,r) is the discount factor
I_o is the initial outlay
C is the uniform annual receipt ($C_1 = C_2 = ... = C_n$).

Example:

What is the IRR of an equal annual income of $20 per annum which accrues for 7 years and costs $120?

$$Q(7,r) = \frac{\$120}{20}$$
$$= 6$$

From the tables = 4%

Economic rationale for IRR:

If IRR exceeds cost of capital, project is worthwhile, i.e. it is profitable to undertake.
Now attempt exercise 6.4

Exercise 6.4 Internal rate of return

Find the IRR of this project for a firm with a 20% cost of capital:

YEAR	CASH FLOW
	$
0	-10,000
1	8,000
2	6,000

a) Try 20%
b) Try 27%
c) Try 29%

Net present value vs internal rate of return

Independent vs dependent projects

NPV and IRR methods are closely related because:

i) both are time-adjusted measures of profitability, and
ii) their mathematical formulas are almost identical.

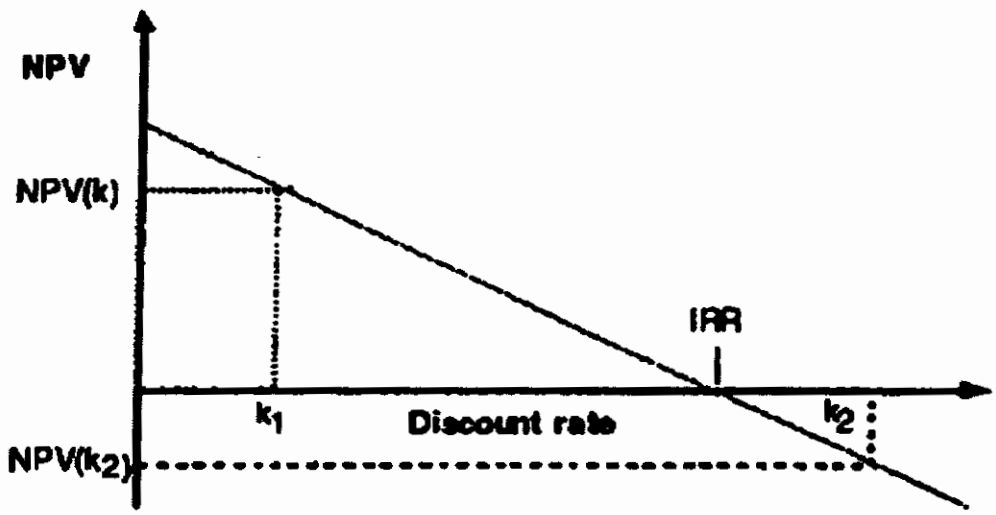
So, which method leads to an optimal decision: IRR or NPV?

a) NPV vs IRR: Independent projects

Independent project: Selecting one project does not preclude the choosing of the other.

With conventional cash flows (-|+|+) no conflict in decision arises; in this case both NPV and IRR lead to the same accept/reject decisions.

Figure 6.1 NPV vs IRR Independent projects



If cash flows are discounted at k_1, NPV is positive and IRR > k_1: accept project.

If cash flows are discounted at k_2, NPV is negative and IRR < k_2: reject the project

Mathematical proof: for a project to be acceptable, the NPV must be positive, i e

$$\sum_{t=1}^{n} \frac{C_t}{(I+k)^t} - I_o > 0 \text{ or } \sum_{t=1}^{n} \frac{C_t}{(I+k)^t} - I_o > I_o$$

Similarly for the same project to be acceptable:

$$\sum_{t=1}^{n} \frac{C_t}{(I+R)^t} = I_o$$

where R is the IRR.

Since the numerators C_t are identical and positive in both instances:

- implicitly/intuitively R must be greater than k (R > k);
- If NPV = 0 then R = k: the company is indifferent to such a project;
- Hence, IRR and NPV lead to the same decision in this case.

b) NPV vs IRR: Dependent projects

NPV clashes with IRR where mutually exclusive projects exist.

Example:

Agritex is considering building either a one-storey (Project A) or five-storey (Project B) block of offices on a prime site. The following information is available:

	Initial Investment Outlay	Net Inflow at the Year End
Project A	-9,500	11,500
Project B	-15,000	18,000

Assume k = 10%, which project should Agritex undertake?

$$NPV_A = \frac{\$11,500}{1.1} - \$9,500$$

= <u>$954.55</u>

$$NPV_B = \frac{\$18,000}{1.1} - \$15,000$$

= <u>$1,363.64</u>

Both projects are of one-year duration:

$$\frac{\$11,500}{1+R_A} = \$9,500$$

IRR_A:

$\$11,500 = \$9,500\ (1 + R_A)$

$$\frac{\$11,500}{\$9,500} = 1 + R_A$$

$$R_A = \frac{\$11{,}500}{\$9{,}500} - 1$$

= 1.21-1

therefore IRR_A = <u>21%</u>

IRR_B: $\frac{\$18{,}000}{1+R_B} = \$15{,}000$

$\$18{,}000 = \$15{,}000(1 + R_B)$

$$R_B = \frac{\$18{,}000}{\$15{,}000} - 1$$

= 1.2-1

therefore IRR_B = <u>20%</u>

Decision:

Assuming that k = 10%, both projects are acceptable because:

NPV_A and NPV_B are both positive

$IRR_A > k$ AND $IRR_B > k$

Which project is a "better option" for Agritex?

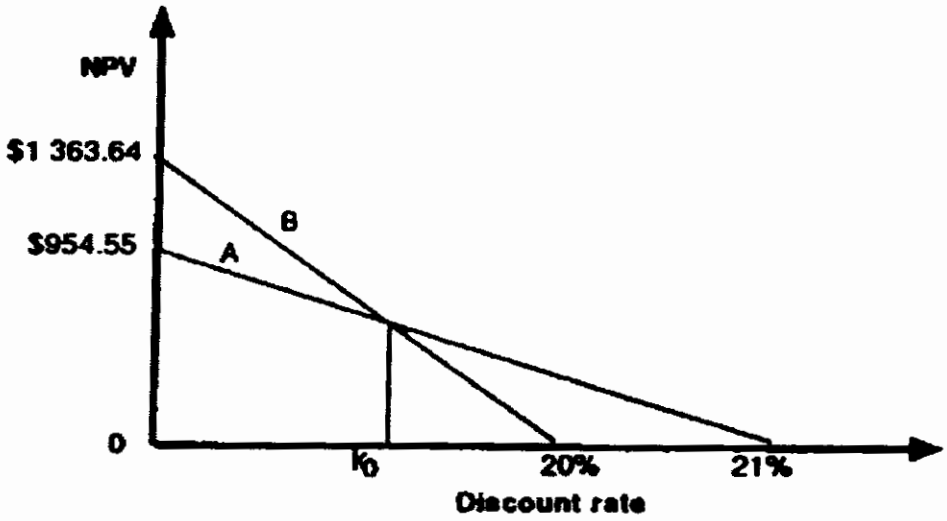
If we use the NPV method:

NPV_B ($1,363.64) > NPV_A ($954.55): Agritex should choose Project B.

If we use the IRR method:

IRR_A (21%) > IRR_B (20%): Agritex should choose Project A. See figure 6.2.

Figure 6.2 NPV vs IRR: Dependent projects



Up to a discount rate of k_o: project B is superior to project A, therefore project B is preferred to project A.

Beyond the point k_o: project A is superior to project B, therefore project A is preferred to project B

The two methods do not rank the projects the same.

Differences in the scale of investment

NPV and IRR may give conflicting decisions where projects differ in their scale of investment. Example:

Years	0	1	2	3
Project A	-2,500	1,500	1,500	1,500
Project B	-14,000	7,000	7,000	7,000

Assume k= 10%.

NPV_A = $1,500 x PVFA at 10% for 3 years
= $1,500 x 2.487 = $3,730.50 - $2,500.00 = = <u>$1,230.50.</u>

NPV_B == $7,000 x PVFA at 10% for 3 years
= $7,000 x 2.487 = $17,409 - $14,000 = <u>$3,409.00.</u>

$$IRR_A = \frac{I_o}{C_t} = \frac{\$2,500}{\$1,500} = 1.67.$$

Therefore **IRR_A** = 36% (from the tables)

$$IRR_B = \frac{I_o}{C_t} = \frac{\$14,000}{\$7,000} = 2.0$$

Therefore **IRR_B** = <u>21%</u>

Decision:

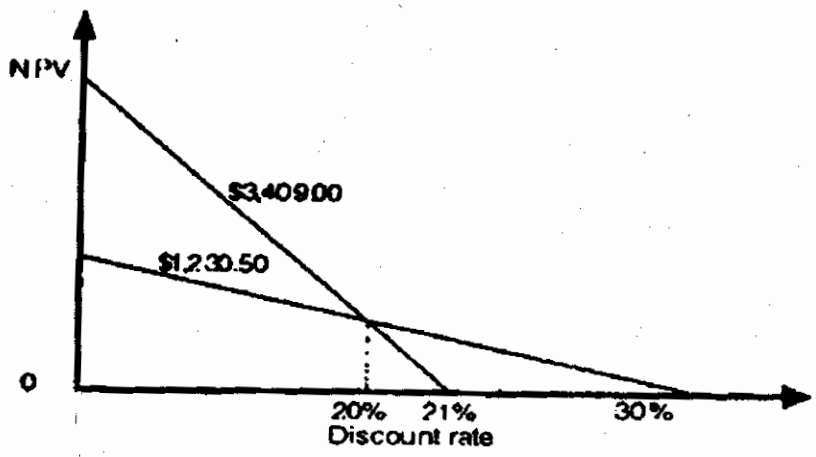
Conflicting, as:

- NPV prefers B to A
- IRR prefers A to B

	NPV	IRR
Project A	$ 3,730.50	36%
Project B	$17,400.00	21%

See figure 6.3.

Figure 6.3 Scale of investments



To show why:

i) the NPV prefers B, the larger project, for a discount rate below 20%

ii) the NPV is superior to the IRR

a) Use the incremental cash flow approach, "B minus A" approach
b) Choosing project B is tantamount to choosing a hypothetical project "B minus A".

	0	1	2	3
Project B	- 14,000	7,000	7,000	7,000
Project A	- 2,500	1,500	1,500	1,500
"B minus A"	- 11,500	5,500	5,500	5,500

$$IRR_{\text{"B Minus A"}} = \frac{\$11,500}{\$5,500} = 2.09 = \underline{20\%}$$

c) Choosing B is equivalent to: A + (B - A) = B

d) Choosing the bigger project B means choosing the smaller project A plus an additional outlay of $11,500 of which $5,500 will be realised each year for the next 3 years.

e) The $IRR_{\text{"B minus A"}}$ on the incremental cash flow is 20%.

f) Given k of 10%, this is a profitable opportunity, therefore must be accepted.

g) But, if k were greater than the IRR (20%) on the incremental CF, then reject project.

h) At the point of intersection,

$NPV_A = NPV_B$ or $NPV_A - NPV_B = 0$, i.e. indifferent to projects A and B.

i) If k = 20% (IRR of "B - A") the company should accept project A.

- This justifies the use of NPV criterion.

Advantage of NPV:

- It ensures that the firm reaches an optimal scale of investment.

Disadvantage of IRR:

- It expresses the return in a percentage form rather than in terms of absolute dollar returns, e.g. the IRR will prefer 500% of $1 to 20% return on $100. However, most companies set their goals in absolute terms and not in % terms, e.g. target sales figure of $2.5 million.

The timing of the cash flow

The IRR may give conflicting decisions where the timing of cash flows varies between the 2 projects.

Note that initial outlay I_o is the same.

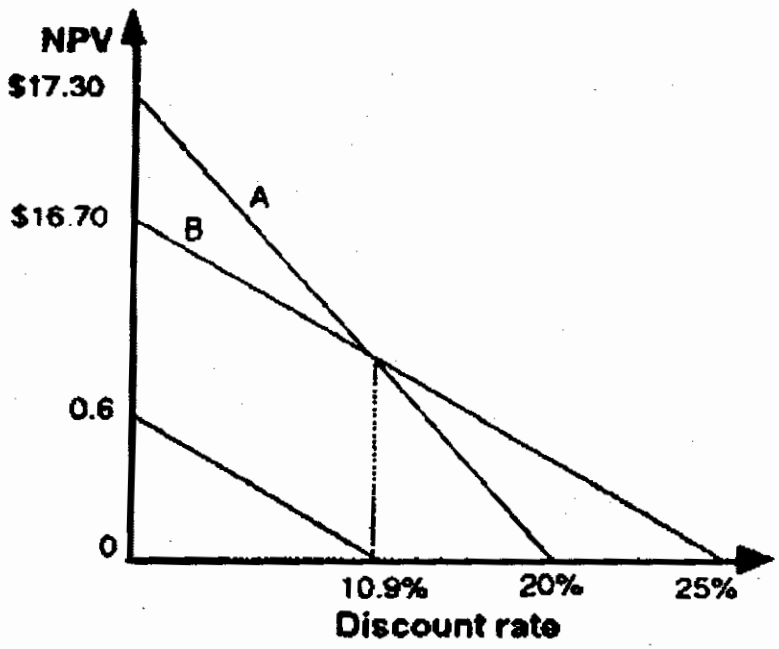
	0	1	2
Project A	- 100	20	125.00
Project B	- 100	100	31.25
"A minus B"	0	- 80	88.15

Assume k = 10%

	NPV	IRR
Project A	17.3	20.0%
Project B	16.7	25.0%
"A minus B"	0.6	10.9%

IRR prefers B to A even though both projects have identical initial outlays. So, the decision is to accept A, that is B + (A - B) = A. See figure 6.4.

Figure 6.4 Timing of the cash flow



The horizon problem

NPV and IRR rankings are contradictory. Project A earns $120 at the end of the first year while project B earns $174 at the end of the fourth year.

	0	1	2	3	4
Project A	-100	120	-	-	-
Project B	-100	-	-	-	174

Assume k = 10%

	NPV	IRR
Project A	9	20%
Project B	19	15%

Decision:

NPV prefers B to A
IRR prefers A to B.

The profitability index - PI

This is a variant of the NPV method.

$$PI = \frac{PV}{I_o}$$

Decision rule:

PI > 1; accept the project
PI < 1; reject the project

If NPV = 0, we have:

$NPV = PV - I_o = 0$
$PV = I_o$

Dividing both sides by I_o we get:

$$\frac{PV}{I_o} > 1$$

PI of 1.2 means that the project's profitability is 20%. Example:

	PV of CF	I_o	PI
Project A	100	50	2.0
Project B	1.500	1.000	1 5

Decision:

Choose option B because it maximises the firm's profitability by $1,500.

Disadvantage of PI:

Like IRR it is a percentage and therefore ignores the scale of investment.

The payback period (PP)

The CIMA defines payback as 'the time it takes the cash inflows from a capital investment project to equal the cash outflows, usually expressed in years'. When deciding between two or more competing projects, the usual decision is to accept the one with the shortest payback.

Payback is often used as a "first screening method". By this, we mean that when a capital investment project is being considered, the first question to ask is: 'How long will it take to pay back its cost?' The company might have a target payback, and so it would reject a capital project unless its payback period were less than a certain number of years.

Example 1:

Years	0	1	2	3	4	5
Project A	1,000,000	250,000	250,000	250,000	250,000	250,000

For a project with equal annual receipts:

$$PP = \frac{I_o}{C_t} = \frac{\$1,000,000}{\$250,000} = \underline{4 \text{ years}}$$

Example 2:

Years	0	1	2	3	4
Project B	- 10,000	5,000	2,500	4,000	1,000

Payback period lies between year 2 and year 3. Sum of money recovered by the end of the second year

= $7,500, i.e. ($5,000 + $2,500)

Sum of money to be recovered by end of 3rd year

= $10,000 - $7,500 = $\underline{\$2,500}$

$$\text{Payback period} = \left(2 + \frac{\$2,500}{\$4,000}\right) \text{years}$$

= $\underline{2.625 \text{ years}}$

Disadvantages of the payback method:

- It ignores the timing of cash flows within the payback period, the cash flows after the end of payback period and therefore the total project return.
- It ignores the time value of money. This means that it does not take into account the fact that $1 today is worth more than $1 in one year's time. An investor who has $1 today can either consume it immediately or alternatively can invest it at the prevailing interest rate, say 30%, to get a return of $1.30 in a year's time.
- It is unable to distinguish between projects with the same payback period
- It may lead to excessive investment in short-term projects.

Advantages of the payback method:

- Payback can be important: long payback means capital tied up and high investment risk. The method also has the advantage that it involves a quick, simple calculation and an easily understood concept.

The accounting rate of return - (ARR)

The ARR method (also called the return on capital employed (ROCE) or the return on investment (ROI) method) of appraising a capital project is to estimate the accounting rate of return that the project should yield. If it exceeds a target rate of return the project will be undertaken.

$$\text{ARR on total investment} = \frac{\text{Net Annual Profit}}{\text{Investment Outlay}} \; or \left[Rt + \frac{(C - D)}{I_o} \right]$$

Note that net annual profit excludes depreciation.

Example:

A project has an initial outlay of $1 million and generates net receipts of $250,000 for 10 years.

Assuming straight-line depreciation of $100,000 per year:

$$\text{the RR on total investment} = \frac{\$250{,}000 - \$100{,}000}{1{,}000{,}000} = \underline{15\%}$$

$$\text{ARR on total investment} = \frac{\text{Net Annual Profit}}{\text{Investment Outlay}/2} \; or \left[R_t + \frac{(C - D)}{I_o/2} \right]$$

$$= \frac{\$250{,}000 - \$100{,}000}{\$1{,}000{,}000 \div 2} = \frac{\$150{,}000}{\$500{,}000} = \underline{30\%}$$

Disadvantages:

- It does not take account of the timing of the profits from an investment.
- It implicitly assumes stable cash receipts over time.
- It is based on accounting profits and not cash flows. Accounting profits are subject to a number of different accounting treatments.
- It is a relative measure rather than an absolute measure and hence takes no account of the size of the investment.
- It takes no account of the length of the project.
- it ignores the time value of money.

The payback and ARR methods in practice

Despite the limitations of the payback method, it is the method most widely used in practice. There are a number of reasons for this:

- It is a particularly useful approach for ranking projects where a firm faces liquidity constraints and requires fast repayment of investments

- It is appropriate in situations where risky investments are made in uncertain markets that are subject to fast design and product changes or where future cash flows are particularly difficult to predict.
- The method is often used in conjunction with NPV or IRR method and acts as a first screening device to identify projects which are worthy of further investigation.
- it is easily understood by all levels of management.
- It provides an important summary method: how quickly will the initial investment be recouped?

Now attempt exercise 6.5.

Exercise 6.5 Payback and ARR

Delta Corporation is considering two capital expenditure proposals. Both proposals are for similar products and both are expected to operate for four years. Only one proposal can be accepted.

The following information is available:

	Profit/(loss)	
	Proposal A	Proposal B
	$	$
Initial investment	46,000	46,000
Year 1	6,500	4,500
Year 2	3,500	2,500
Year 3	13,500	4,500
Year 4	Loss 1,500	Profit 14,500
Estimated scrap value at the end of Year 4	4,000	4,000

Depreciation is charged on the straight line basis. Problem:

a) Calculate the following for both proposals:

i) the payback period to one decimal place
ii) the average rate of return on initial investment, to one decimal place.

Allowing for inflation

So far, the effect of inflation has not been considered on the appraisal of capital investment proposals. Inflation is particularly important in developing countries as the rate of inflation tends to be rather high. As inflation rate increases, so will the minimum return required by an investor. For example, one might be happy with a return of 10% with zero inflation, but if inflation was 20%, one would expect a much greater return.

Example:

Keymer Farm is considering investing in a project with the following cash flows

TIME	ACTUAL CASH FLOWS Z$
0	(100,000)
1	90,000
2	80,000
3	70,000

Keymer Farm requires a minimum return of 40% under the present conditions. Inflation is currently running at 30% a year, and this is expected to continue indefinitely. Should Keymer Farm go ahead with the project?

Let us take a look at Keymer Farm's required rate of return. If it invested $10,000 for one year on 1 January, then on 31 December it would require a minimum return of $4,000. With the initial investment of $10,000, the total value of the investment by 31 December must increase to $14,000. During the year, the purchasing value of the dollar would fall due to inflation. We can restate the amount received on 31 December in terms of the purchasing power of the dollar at 1 January as follows:

Amount received on 31 December in terms of the value of the dollar at 1 January

$$= \frac{\$14,000}{(1.30)^1} = \underline{\$10,769}$$

In terms of the value of the dollar at 1 January, Keymer Farm would make a profit of $769 which represents a rate of return of 7.69% in "today's money" terms. This is known as the real rate of return. The required rate of 40% is a money rate of return (sometimes known as a nominal rate of return). The money rate measures the return in terms of the dollar, which is falling in value. The real rate measures the return in constant price level terms.

The two rates of return and the inflation rate are linked by the equation:

(1 + money rate) = (1 + real rate) x (1 + inflation rate)

where all the rates are expressed as proportions.

In the example,

$$(1 + 0.40) = (1 + 0.0769) \times (1 + 0.3) = \underline{1.40}$$

So, which rate is used in discounting? As a rule of thumb:

a) If the cash flows are expressed in terms of actual dollars that will be received or paid in the future, the money rate for discounting should be used.

b) If the cash flows are expressed in terms of the value of the dollar at time 0 (i.e. in constant price level terms), the real rate of discounting should be used.

In Keymer Farm's case, the cash flows are expressed in terms of the actual dollars that will be received or paid at the relevant dates. Therefore, we should discount them using the money rate of return.

TIME	CASH FLOW	DISCOUNT FACTOR	PV
	$	40%	$
0	(150,000)	1.000	(100,000)
1	90,000	0.714	64,260
2	80,000	0.510	40,800
3	70,000	0.364	25,480
			30,540

The project has a positive net present value of $30,540, so Keymer Farm should go ahead with the project.

The future cash flows can be re-expressed in terms of the value of the dollar at time 0 as follows, given inflation at 30% a year:

TIME	ACTUAL CASH FLOW	CASH FLOW AT TIME 0 PRICE LEVEL	
	$		$
0	(100,000)	(100,000)	
1	90,000	$90{,}000 \times \frac{1}{(1.30)^1} =$	69,231
2	80,000	$80{,}000 \times \frac{1}{(1.30)^2} =$	47,337
3	70,000	$70{,}000 \times \frac{1}{(1.30)^3} =$	31,862

The cash flows expressed in terms of the value of the dollar at time 0 can now be discounted using the real value of 7.69%.

TIME	CASH FLOW	DISCOUNT FACTOR	PV
	$	7.69%	$
0	(100,000)	1.000	(100,000)
1	69,231	$\frac{1}{(1.0769)^1}$	64,246
2	47,337	$\frac{1}{(1.0769)^2}$	40,804
3	31,862	$\frac{1}{(1.0769)^3}$	25,490
			30,540

The NPV is the same as before.

Expectations of inflation and the effects of inflation

When a manager evaluates a project, or when a shareholder evaluates his/her investments, he/she can only guess what the rate of inflation will be. These guesses will probably be wrong, at least to some extent, as it is extremely difficult to forecast the rate of inflation accurately. The only way in which uncertainty about inflation can be allowed for in project evaluation is by risk and uncertainty analysis.

Inflation may be *general*, that is, affecting prices of all kinds, or *specific* to particular prices. Generalised inflation has the following effects:

a) Inflation will mean higher costs and higher selling prices. It is difficult to predict the effect of higher selling prices on demand. A company that raises its prices by 30%, because the general rate of inflation is 30%, might suffer a serious fall in demand.
b) Inflation, as it affects financing needs, is also going to affect gearing, and so the cost of capital.
c) Since fixed assets and stocks will increase in money value, the same quantities of assets must be financed by increasing amounts of capital. If the future rate of inflation can be predicted with some degree of accuracy, management can work out how much extra finance the company will need and take steps to obtain it, e.g. by increasing retention of earnings, or borrowing.

However, if the future rate of inflation cannot be predicted with a certain amount of accuracy, then management should estimate what it will be and make plans to obtain the extra finance accordingly. Provisions should also be made to have access to 'contingency funds' should the rate of inflation exceed expectations, e.g. a higher bank overdraft facility might be arranged should the need arise.

Many different proposals have been made for accounting for inflation. Two systems known as "Current purchasing power" (CPP) and "Current cost accounting" (CCA) have been suggested.

CPP is a system of accounting which makes adjustments to income and capital values to allow for the general rate of price inflation.

CCA is a system which takes account of specific price inflation (i.e changes in the prices of specific assets or groups of assets), but not of general price inflation. It involves adjusting accounts to reflect the current values of assets owned and used

At present, there is very little measure of agreement as to the best approach to the problem of 'accounting for inflation'. Both these approaches are still being debated by the accountancy bodies.

Now attempt exercise 6.6.

Exercise 6.6 Inflation

TA Holdings is considering whether to invest in a new product with a product life of four years. The cost of the fixed asset investment would be $3,000,000 in total, with $1,500,000 payable at once and the rest after one year. A further investment of $600,000 in working capital would be required.

The management of TA Holdings expect all their investments to justify themselves financially within four years, after which the fixed asset is expected to be sold for $600,000.

The new venture will incur fixed costs of $1,040,000 in the first year, including depreciation of $400,000. These costs, excluding depreciation, are expected to rise by 10% each year because of inflation. The unit selling price and unit variable cost are $24 and $12 respectively in the first year and expected yearly increases because of inflation are 8% and 14% respectively. Annual sales are estimated to be 175,000 units.

TA Holdings money cost of capital is 28%.

Is the product worth investing in?

Key terms

Accounting rate of return
Annuities
Capital budgeting
Cash flow
Classification of investment projects
Compound interest
Current cost accounting (CCA)
Current purchasing power (CPP)
Dependent projects
Independent projects
Inflation
Interest rate
Internal rate of return
Investment decision
Net present value
Payback period
Perpetuity
Present value
Rates of return
The time value of money

Chapter 7 - Sources of finance

Chapter objectives

This chapter is intended to provide:

- An introduction to the different sources of finance available to management, both internal and external
- An overview of the advantages and disadvantages of the different sources of funds
- An understanding of the factors governing the choice between different sources of funds.

Sourcing money may be done for a variety of reasons. Traditional areas of need may be for capital asset acquirement - new machinery or the construction of a new building or depot. The development of new products can be enormously costly and here again capital may be required. Normally, such developments are financed internally, whereas capital for the acquisition of machinery may come from external sources. In this day and age of tight liquidity, many organizations have to look for short-term capital in the way of overdraft or loans in order to provide a cash flow cushion. Interest rates can vary from organization to organization and also according to purpose.

Structure of the chapter

This final chapter starts by looking at the various forms of "shares" as a means to raise new capital and retained earnings as another source. However, whilst these may be "traditional" ways of raising funds, they are by no means the only ones There are many more sources available to companies who do not wish to become "public" by means of share issues. These alternatives include bank borrowing, government assistance, venture capital and franchising. All have their own advantages and disadvantages and degrees of risk attached.

Sources of funds

A company might raise new funds from the following sources:

- The capital markets:

  i) new share issues, for example, by companies acquiring a stock market listing for the first time

  ii) rights issues

- Loan stock
- Retained earnings
- Bank borrowing
- Government sources
- Business expansion scheme funds
- Venture capital
- Franchising.

Ordinary (equity) shares

Ordinary shares are issued to the owners of a company. They have a nominal or 'face' value, typically of $1 or 50 cents. The market value of a quoted company's shares bears no relationship to their nominal value, except that when ordinary shares are issued for cash, the issue price must be equal to or be more than the nominal value of the shares.

Deferred ordinary shares

are a form of ordinary shares, which are entitled to a dividend only after a certain date or if profits rise above a certain amount. Voting rights might also differ from those attached to other ordinary shares.

Ordinary shareholders put funds into their company:

a) by paying for a new issue of shares
b) through retained profits.

Simply retaining profits, instead of paying them out in the form of dividends. offers an important, simple low-cost source of finance, although this method may not provide enough funds, for example, if the firm is seeking to grow.

A new issue of shares might be made in a variety of different circumstances:

a) The company might want to raise more cash. If it issues ordinary shares for cash, should the shares be issued pro rata to existing shareholders, so that control or ownership of the company is not affected? If, for example, a company with 200,000 ordinary shares in issue decides to issue 50,000 new shares to raise cash, should it offer the new shares to existing shareholders, or should it sell them to new shareholders instead?

   i) If a company sells the new shares to existing shareholders in proportion to their existing shareholding in the company, we have a *rights issue*. In the example above, the 50,000 shares would be issued as a one-in-four rights issue, by offering shareholders one new share for every four shares they currently hold.

   ii) If the number of new shares being issued is small compared to the number of shares already in issue, it might be decided instead to sell them to new shareholders, since ownership of the company would only be minimally affected.

b) The company might want to issue shares partly to raise cash, but more importantly to float' its shares on a stick exchange.

c) The company might issue new shares to the shareholders of another company, in order to take it over.

New shares issues

A company seeking to obtain additional equity funds may be:

a) an unquoted company wishing to obtain a Stock Exchange quotation

b) an unquoted company wishing to issue new shares, but without obtaining a Stock Exchange quotation

c) a company which is already listed on the Stock Exchange wishing to issue additional new shares.

The methods by which an unquoted company can obtain a quotation on the stock market are:

a) an offer for sale
b) a prospectus issue
c) a placing
d) an introduction.

Offers for sale:

An offer for sale is a means of selling the shares of a company to the public.

a) An unquoted company may issue shares, and then sell them on the Stock Exchange, to raise cash for the company. All the shares in the company not just the new ones, would then become marketable.

b) Shareholders in an unquoted company may sell some of their existing shares to the general public. When this occurs, the company is not raising any new funds, but just providing a wider market for its existing shares (all of which would become marketable), and giving existing shareholders the chance to cash in some or all of their investment in their company.

When companies 'go public' for the first time, a 'large' issue will probably take the form of an offer for sale. A smaller issue is more likely to be a placing, since the amount to be raised can be obtained more cheaply if the issuing house or other sponsoring firm approaches selected institutional investors privately.

Rights issues

A rights issue provides a way of raising new share capital by means of an offer to existing shareholders, inviting them to subscribe cash for new shares in proportion to their existing holdings.

For example, a rights issue on a one-for-four basis at 280c per share would mean that a company is inviting its existing shareholders to subscribe for one new share for every four shares they hold, at a price of 280c per new share.

A company making a rights issue must set a price which is low enough to secure the acceptance of shareholders, who are being asked to provide extra funds, but not too low, so as to avoid excessive dilution of the earnings per share.

Preference shares

Preference shares have a fixed percentage dividend before any dividend is paid to the ordinary shareholders. As with ordinary shares a preference dividend can only be

paid if sufficient distributable profits are available, although with 'cumulative' preference shares the right to an unpaid dividend is carried forward to later years. The arrears of dividend on cumulative preference shares must be paid before any dividend is paid to the ordinary shareholders.

From the company's point of view, preference shares are advantageous in that:

- Dividends do not have to be paid in a year in which profits are poor, while this is not the case with interest payments on long term debt (loans or debentures).
- Since they do not carry voting rights, preference shares avoid diluting the control of existing shareholders while an issue of equity shares would not
- Unless they are redeemable, issuing preference shares will lower the company's gearing. Redeemable preference shares are normally treated as debt when gearing is calculated.
- The issue of preference shares does not restrict the company's borrowing power, at least in the sense that preference share capital is not secured against assets in the business.
- The non-payment of dividend does not give the preference shareholders the right to appoint a receiver, a right which is normally given to debenture holders.

However, dividend payments on preference shares are not tax deductible in the way that interest payments on debt are. Furthermore, for preference shares to be attractive to investors, the level of payment needs to be higher than for interest on debt to compensate for the additional risks.

For the investor, preference shares are less attractive than loan stock because:

- they cannot be secured on the company's assets
- the dividend yield traditionally offered on preference dividends has been much too low to provide an attractive investment compared with the interest yields on loan stock in view of the additional risk involved.

Loan stock

Loan stock is long-term debt capital raised by a company for which interest is paid, usually half yearly and at a fixed rate. Holders of loan stock are therefore long-term creditors of the company.

Loan stock has a nominal value, which is the debt owed by the company, and interest is paid at a stated "coupon yield" on this amount. For example, if a company issues 10% loan stocky the coupon yield will be 10% of the nominal value of the stock, so that $100 of stock will receive $10 interest each year. The rate quoted is the gross rate, before tax.

Debentures are a form of loan stock, legally defined as the written acknowledgement of a debt incurred by a company, normally containing provisions about the payment of interest and the eventual repayment of capital.

Debentures with a floating rate of interest

These are debentures for which the coupon rate of interest can be changed by the issuer, in accordance with changes in market rates of interest. They may be attractive to both lenders and borrowers when interest rates are volatile.

Security

Loan stock and debentures will often be *secured*. Security may take the form of either a *fixed charge* or a *floating charge*.

a) **Fixed charge;** Security would be related to a specific asset or group of assets, typically land and buildings. The company would be unable to dispose of the asset without providing a substitute asset for security, or without the lender's consent.

b) **Floating charge;** With a floating charge on certain assets of the company (for example, stocks and debtors), the lender's security in the event of a default payment is whatever assets of the appropriate class the company then owns (provided that another lender does not have a prior charge on the assets). The company would be able, however, to dispose of its assets as it chose until a default took place. In the event of a default, the lender would probably appoint a receiver to run the company rather than lay claim to a particular asset.

The redemption of loan stock

Loan stock and debentures are usually redeemable. They are issued for a term of ten years or more, and perhaps 25 to 30 years. At the end of this period, they will "mature" and become redeemable (at par or possibly at a value above par).

Most redeemable stocks have an earliest and latest redemption date. For example, 18% Debenture Stock 2007/09 is redeemable, at any time between the earliest specified date (in 2007) and the latest date (in 2009). The issuing company can choose the date. The decision by a company when to redeem a debt will depend on:

a) how much cash is available to the company to repay the debt
b) the nominal rate of interest on the debt. If the debentures pay 18% nominal interest and the current rate of interest is lower, say 10%, the company may try to raise a new loan at 10% to redeem the debt which costs 18%. On the other hand, if current interest rates are 20% the company is unlikely to redeem the debt until the latest date possible because the debentures would be a cheap source of funds.

There is no guarantee that a company will be able to raise a new loan to pay off a maturing debt, and one item to look for in a company's balance sheet is the redemption date of current loans, to establish how much new finance is likely to be needed by the company, and when.

Mortgages are a specific type of secured loan. Companies place the title deeds of freehold or long leasehold property as security with an insurance company or mortgage broker and receive cash on loan, usually repayable over a specified period. Most organisations owning property which is unencumbered by any charge should be able to obtain a mortgage up to two thirds of the value of the property.

As far as companies are concerned, debt capital is a potentially attractive source of finance because interest charges reduce the profits chargeable to corporation tax

Retained earnings

For any company, the amount of earnings retained within the business has a direct impact on the amount of dividends. Profit re-invested as retained earnings is profit that could have been paid as a dividend. The major reasons for using retained earnings to finance new investments, rather than to pay higher dividends and then raise new equity for the new investments, are as follows:

a) The management of many companies believes that retained earnings are funds which do not cost anything, although this is not true. However, it is true that the use of retained earnings as a source of funds does not lead to a payment of cash.

b) The dividend policy of the company is in practice determined by the directors. From their standpoint, retained earnings are an attractive source of finance because investment projects can be undertaken without involving either the shareholders or any outsiders.

c) The use of retained earnings as opposed to new shares or debentures avoids issue costs.

d) The use of retained earnings avoids the possibility of a change in control resulting from an issue of new shares.

Another factor that may be of importance is the financial and taxation position of the company's shareholders. If, for example, because of taxation considerations, they would rather make a capital profit (which will only be taxed when shares are sold) than receive current income, then finance through retained earnings would be preferred to other methods.

A company must restrict its self-financing through retained profits because shareholders should be paid a reasonable dividend, in line with realistic expectations, even if the directors would rather keep the funds for re-investing. At the same time, a company that is looking for extra funds will not be expected by investors (such as banks) to pay generous dividends, nor over-generous salaries to owner-directors.

Bank lending

Borrowings from banks are an important source of finance to companies. Bank lending is still mainly short term, although medium-term lending is quite common these days.

Short term lending may be in the form of:

a) an overdraft, which a company should keep within a limit set by the bank. Interest is charged (at a variable rate) on the amount by which the company is overdrawn from day to day;
b) a short-term loan, for up to three years.

Medium-term loans are loans for a period of from three to ten years. The rate of interest charged on medium-term bank lending to large companies will be a set margin, with the size of the margin depending on the credit standing and riskiness of the borrower. A loan may have a fixed rate of interest or a variable interest rate, so that the rate of interest charged will be adjusted every three, six, nine or twelve months in line with recent movements in the Base Lending Rate.

Lending to smaller companies will be at a margin above the bank's base rate and at either a variable or fixed rate of interest. Lending on overdraft is always at a variable rate. A loan at a variable rate of interest is sometimes referred to as a *floating rate loan.* Longer-term bank loans will sometimes be available, usually for the purchase of property, where the loan takes the form of a mortgage. When a banker is asked by a business customer for a loan or overdraft facility, he will consider several factors known commonly by the mnemonic **PARTS.**

- Purpose
- Amount
- Repayment
- Term
- Security

P	The purpose of the loan A loan request will be refused if the purpose of the loan is not acceptable to the bank.
A	The amount of the loan. The customer must state exactly how much he wants to borrow. The banker must verify, as far as he is able to do so, that the amount required to make the proposed investment has been estimated correctly.
R	How will the loan be repaid? Will the customer be able to obtain sufficient income to make the necessary repayments?
T	What would be the duration of the loan? Traditionally, banks have offered short-term loans and overdrafts, although medium-term loans are now quite common
S	Does the loan require security? If so, is the proposed security adequate?

Leasing

A lease is an agreement between two parties, the "lessor" and the "lessee" The lessor owns a capital asset, but allows the lessee to use it. The lessee makes payments under the terms of the lease to the lessor, for a specified period of time.

Leasing is, therefore, a form of rental. Leased assets have usually been plant and machinery, cars and commercial vehicles, but might also be computers and office equipment. There are two basic forms of lease: "operating leases" and "finance leases".

Operating leases

Operating leases are rental agreements between the lessor and the lessee whereby:

a) the lessor supplies the equipment to the lessee

b) the lessor is responsible for servicing and maintaining the leased equipment

c) the period of the lease is fairly short, less than the economic life of the asset, so that at the end of the lease agreement, the lessor can either

i) lease the equipment to someone else, and obtain a good rent for it, or
ii) sell the equipment secondhand.

Finance leases

Finance leases are lease agreements between the user of the leased asset (the lessee) and a provider of finance (the lessor) for most, or all, of the asset's expected useful life.

Suppose that a company decides to obtain a company car and finance the acquisition by means of a finance lease. A car dealer will supply the car. A finance house will agree to act as lessor in a finance leasing arrangement, and so will purchase the car from the dealer and lease it to the company. The company will take possession of the car from the car dealer, and make regular payments (monthly, quarterly, six monthly or annually) to the finance house under the terms of the lease.

Other important characteristics of a finance lease:

a) The lessee is responsible for the upkeep, servicing and maintenance of the asset. The lessor is not involved in this at all.

b) The lease has a primary period, which covers all or most of the economic life of the asset. At the end of the lease, the lessor would not be able to lease the asset to someone else, as the asset would be worn out. The lessor must, therefore, ensure that the lease payments during the primary period pay for the full cost of the asset as well as providing the lessor with a suitable return on his investment.

c) It is usual at the end of the primary lease period to allow the lessee to continue to lease the asset for an indefinite secondary period, in return for a very low nominal rent. Alternatively, the lessee might be allowed to sell the asset on the lessor's behalf (since the lessor is the owner) and to keep most of the sale proceeds, paying only a small percentage (perhaps 10%) to the lessor.

Why might leasing be popular

The attractions of leases to the supplier of the equipment, the lessee and the lessor are as follows:

- The supplier of the equipment is paid in full at the beginning. The equipment is sold to the lessor, and apart from obligations under guarantees or warranties, the supplier has no further financial concern about the asset.
- The lessor invests finance by purchasing assets from suppliers and makes a return out of the lease payments from the lessee. Provided that a lessor can find lessees willing to pay the amounts he wants to make his return, the lessor can make good profits. He will also get capital allowances on his purchase of the equipment.
- Leasing might be attractive to the lessee:

i) if the lessee does not have enough cash to pay for the asset, and would have difficulty obtaining a bank loan to buy it, and so has to rent it in one way or another if he is to have the use of it at all or

ii) if finance leasing is cheaper than a bank loan. The cost of payments under a loan might exceed the cost of a lease.

Operating leases have further advantages:

- The leased equipment does not need to be shown in the lessee's published balance sheet, and so the lessee's balance sheet shows no increase in its gearing ratio.

- The equipment is leased for a shorter period than its expected useful life. In the case of high-technology equipment, if the equipment becomes out-of-date before the end of its expected life, the lessee does not have to keep on using it, and it is the lessor who must bear the risk of having to sell obsolete equipment secondhand.

The lessee will be able to deduct the lease payments in computing his taxable profits.

Hire purchase

Hire purchase is a form of instalment credit. Hire purchase is similar to leasing, with the exception that ownership of the goods passes to the hire purchase customer on payment of the final credit instalment, whereas a lessee never becomes the owner of the goods.

Hire purchase agreements usually involve a finance house.

i) The supplier sells the goods to the finance house.
ii) The supplier delivers the goods to the customer who will eventually purchase them.
iii) The hire purchase arrangement exists between the finance house and the customer.

The finance house will always insist that the hirer should pay a deposit towards the purchase price. The size of the deposit will depend on the finance company's policy and its assessment of the hirer. This is in contrast to a finance lease, where the lessee might not be required to make any large initial payment.

An industrial or commercial business can use hire purchase as a source of finance. With industrial hire purchase, a business customer obtains hire purchase finance from a finance house in order to purchase the fixed asset. Goods bought by businesses on hire purchase include company vehicles, plant and machinery, office equipment and farming machinery.

Government assistance

The government provides finance to companies in cash grants and other forms of direct assistance, as part of its policy of helping to develop the national economy, especially in high technology industries and in areas of high unemployment. For

example, the Indigenous Business Development Corporation of Zimbabwe (IBDC) was set up by the government to assist small indigenous businesses in that country.

Venture capital

Venture capital is money put into an enterprise which may all be lost if the enterprise fails. A businessman starting up a new business will invest venture capital of his own, but he will probably need extra funding from a source other than his own pocket. However, the term 'venture capital' is more specifically associated with putting money, usually in return for an equity stake, into a new business, a management buy-out or a major expansion scheme.

The institution that puts in the money recognises the gamble inherent in the funding. There is a serious risk of losing the entire investment, and it might take a long time before any profits and returns materialise. But there is also the prospect of very high profits and a substantial return on the investment. A venture capitalist will require a high expected rate of return on investments, to compensate for the high risk.

A venture capital organisation will not want to retain its investment in a business indefinitely, and when it considers putting money into a business venture, it will also consider its "exit", that is, how it will be able to pull out of the business eventually (after five to seven years, say) and realise its profits. Examples of venture capital organisations are: Merchant Bank of Central Africa Ltd and Anglo American Corporation Services Ltd.

When a company's directors look for help from a venture capital institution, they must recognise that:

- the institution will want an equity stake in the company
- it will need convincing that the company can be successful
- it may want to have a representative appointed to the company's board, to look after its interests.

The directors of the company must then contact venture capital organisations, to try and find one or more which would be willing to offer finance. A venture capital organisation will only give funds to a company that it believes can succeed, and before it will make any definite offer, it will want from the company management:

a) a business plan
b) details of how much finance is needed and how it will be used
c) the most recent trading figures of the company, a balance sheet, a cash flow forecast and a profit forecast
d) details of the management team, with evidence of a wide range of management skills
e) details of major shareholders
f) details of the company's current banking arrangements and any other sources of finance
g) any sales literature or publicity material that the company has issued.

A high percentage of requests for venture capital are rejected on an initial screening, and only a small percentage of all requests survive both this screening and further investigation and result in actual investments.

Franchising

Franchising is a method of expanding business on less capital than would otherwise be needed. For suitable businesses, it is an alternative to raising extra capital for growth. Franchisors include Budget Rent-a-Car, Wimpy, Nando's Chicken and Chicken Inn.

Under a franchising arrangement, a franchisee pays a franchisor for the right to operate a local business, under the franchisor's trade name. The franchisor must bear certain costs (possibly for architect's work, establishment costs, legal costs, marketing costs and the cost of other support services) and will charge the franchisee an initial franchise fee to cover set-up costs, relying on the subsequent regular payments by the franchisee for an operating profit. These regular payments will usually be a percentage of the franchisee's turnover.

Although the franchisor will probably pay a large part of the initial investment cost of a franchisee's outlet, the franchisee will be expected to contribute a share of the investment himself. The franchisor may well help the franchisee to obtain loan capital to provide his-share of the investment cost.

The advantages of franchises to the franchisor are as follows:

- The capital outlay needed to expand the business is reduced substantially.
- The image of the business is improved because the franchisees will be motivated to achieve good results and will have the authority to take whatever action they think fit to improve the results.

The advantage of a franchise to a franchisee is that he obtains ownership of a business for an agreed number of years (including stock and premises, although premises might be leased from the franchisor) together with the backing of a large organisation's marketing effort and experience. The franchisee is able to avoid some of the mistakes of many small businesses, because the franchisor has already learned from its own past mistakes and developed a scheme that works.

Now attempt exercise 7.1.

Exercise 7.1 Sources of finance

Outdoor Living Ltd., an owner-managed company, has developed a new type of heating using solar power, and has financed the development stages from its own resources. Market research indicates the possibility of a large volume of demand and a significant amount of additional capital will be needed to finance production.

Advise Outdoor Living Ltd. on:

a) the advantages and disadvantages of loan or equity capital
b) the various types of capital likely to be available and the sources from which they might be obtained
c) the method(s) of finance likely to be most satisfactory to both Outdoor Living Ltd. and the provider of funds.

Key terms

Bank lending
Capital markets
Debentures
Deferred ordinary shares
Franchising
Government assistance
Hire purchase
Loan stocks
New share issue
Ordinary shares
PARTS
Preference shares
Retained earnings
Rights issue
Sources of funds
Venture capital

SAMPLE BUSINESS PLAN

Description: Pickled & Fermented Products

Analysts: Douglas Anderson & Ali El-Saied

Date: April 2003

Key Assumptions:

Enterprise scale		6,000 Ton Raw Material - Full Capacity
Geographic location		Belbeis-Sharkiya
Initial investment	LE	25,409,938
Typical recurrent input costs	LE	13,940,006
Key yield factors		Table Olives
		Marinated Vegetables
Annual Average Gross Return (full Capa		
Table Olives	LE	14,450,000 Per Ton
Marinated Vegetables	LE	17,708,333 Per Ton
Discount rate		0
Inflation rate (if any)		5%
Analysis period		20 years

Present Value @ 10% over 20 years:

Investment inputs	LE	27,594,747 (includes working capital)
Recurrent inputs	LE	13,940,006
Revenues	LE	32,158,333
Residual values	LE	79,310
Net Present Value of Enterprise @ 14% over 20 years		66,715,791

Financial Analysis Results.

Return on recurrent inputs - Stage One	130.68% [illegible]
Return on investment and recurrent inputs - Stage One	54.05% [illegible]
Internal Rate of Return	56.30 %
Benefit Cost Ratio @14%	1.66

Breakeven on cumulative discounted basis after: 4 years

Threshold Analysis Results:

Net Present Value of Enterprise equals ZERO when

Yield / Prices	decreased by	40%
Investment Expenditure	increased by	263%
Recurrent inputs	increased by	90%

Major Risks to Financial Viability

Fluctuations in raw material prices

Relatively new to the market

Note: **Production plan at full capacity**

Product Type	%	Annual production (Ton)	Marketing Plan (Ton) USA	GCC	Local market
Preserved Olives	**44%**	**3,613**	1,806	1,084	723
Lemon	4%	354	177	106	71
Cucumber	4%	354	106	106	142
Tomatoes	5%	425	213	128	85
Grape Leaves	3%	283	85	85	[illegible]
Onions	7%	567	283	113	[illegible]
Garlic	7%	567	283	113	[illegible]
Mushrooms	3%	283	198	85	[illegible]
Cauliflower	5%	425	213	128	[illegible]
Mixed Vegetables	6%	496	248	149	[illegible]
Mangoes	2%	142	[illegible]	43	[illegible]
Artichokes	3%	283	198	85	[illegible]
Asparagus	2%	142	99	43	[illegible]
Pepper	3%	213	106	64	[illegible]

Preamble:

The major objective of this project is to produce high quality table olives and pickled vegetables for export to the highly demanding markets especially to the United States of America.

Processing technique is the highly efficient lactic fermentation techniques widely used world wide nowadays. The project will be a pilot project in Egypt in this field.

Lactic fermentation advantages

- Lactic fermentation gives vegetables a slightly crunchy texture, an attractive color, and a mild tanness, which stimulates the appetite.
- Fermentation uses only the minimum amount of salt required for lactic transformation.
- No vinegar (acetic acid) added.
- Pickled products are rich in desirable lactic bacteria and enzymes.
- Unlike the processes of canning and freezing, preserving fresh vegetables through lactic fermentation involves no cooking or pre-heeting.
- Fermented vegetables contain high amounts of vitamins and minerals.

Risco Spanish company will be responsible to supply the production lines installation, testing, and provide training. Risco is well known in establishing the most efficient food processing plants and have established several highly successful projects in the region.

The Egyptian partner "Sawa Food" is well known in the food processing sector in Egypt for many years as a quality supplier of quality pickled products. Sawa has very good experience in producing and successfully exporting pickled olives and vegetables to several countries including the United States where consumers recognize their products as a quality product.

This business plan is based on actual practical data extracted from actual business transactions performed by Sawa Company. Capital requirements are based on actual offers and the running costs are based on very careful market analysis and market research.

Production capacity of the project is assumed to start with about 2500 tons of fermented products (close to 50 percent table olive and 50 percent pickled

vegetables). The production is assumed to increase gradually to reach it's full capacity by the year 5 of the project life.

Expected returns are based upon very conservative estimates and can be safely summarized as in the following table.

Expected Annual Returns at Full Capacity

Product	Year One					Year Two				
	Sales Strategy*			Volume	Actual Total Factory Gate Value	Sales Strategy*			Volume	Factory Gate Value
	Primary Market	Secondary Markets	Local Market	Ton	US	Primary Market	Secondary Markets	Local Market	Ton	US
Preserved Olives	531.25	318.75	212.50	1,063	4,250,000	850.00	510.00	340.00	1,700	6,800,000
Marinated Vegetables										
Lemon	52.50	31.25	20.83	104	312,500	83.33	50.00	33.33	167	500,000
Cucumber	31.25	31.25	41.67	104	416,667	83.33	50.00	33.33	167	500,000
Tomatoes	87.50	52.50	35.00	175	437,500	140.00	84.00	56.00	280	700,000
Grape Leaves	26.00	26.00	33.33	65	333,333	66.67	40.00	26.67	133	666,667
Onions	53.33	32.00	21.33	107	533,333	133.33	80.00	53.33	267	1,333,333
Garlic	63.33	38.00	25.33	127	633,333	133.33	80.00	53.33	267	1,333,333
Mushrooms	38.33	23.00	15.33	77	383,333	66.67	40.00	26.67	133	666,667
Cauliflower	62.50	37.50	25.00	125	625,000	125.00	75.00	50.00	250	1,250,000
Mixed Vegetables	73.92	44.75	29.83	149	746,667	149.33	89.60	59.73	298	1,493,333
Mangoes	25.83	15.50	10.33	52	258,333	51.67	31.00	20.67	103	516,667
Artichokes	56.33	33.80	22.53	113	563,333	112.67	67.60	45.07	225	1,126,667
Asparagus	26.17	15.70	10.47	52	261,667	52.33	31.40	20.93	105	523,333
Pepper	31.25	18.75	12.50	63	312,500	62.50	37.50	25.00	125	625,000
Total Annual Return					[illegible]					[illegible]

Exchange Rate (1 US$= 5.50 LE) 4.50 LE

* All prices are calculated on Factory Gate prices basis
* Primary market is USA
Secondary Markets are Local Market, EU and GCC countries

Expected Annual Returns at Full Capacity

Product	Year Three					Year Four				
	Sales Strategy*			Volume	Gate Value	Sales Strategy*			Volume	Factory Gate
	Primary Market	Secondary Markets	Local Market	Ton	US	Primary Market	Secondary Markets	Local Market	Ton	US
Preserved Olives	1,168.75	701.25	467.50	2,338	9,350,000	467.50	280.50	187.00	935	[illegible]
Marinated Vegetables										
Lemon	114.58	68.75	45.83	228	687,500	143.83	86.30	57.53	287	[illegible]
Cucumber	68.75	68.75	91.67	229	916,667	143.83	86.30	57.53	287	[illegible]
Tomatoes	137.50	82.50	55.00	275	962,500	175.00	105.00	70.00	350	[illegible]
Grape Leaves	53.00	53.00	73.33	143	733,333	116.67	70.00	46.67	233	[illegible]
Onions	193.33	116.00	77.33	387	1,933,333	253.33	152.00	101.33	507	[illegible]
Garlic	193.33	116.00	77.33	387	1,933,333	253.33	152.00	101.33	507	[illegible]
Mushrooms	128.33	77.00	51.33	257	1,283,333	168.67	101.20	67.47	337	[illegible]
Cauliflower	137.50	82.50	55.00	275	1,375,000	175.00	105.00	70.00	350	[illegible]
Mixed Vegetables	160.42	96.25	64.17	321	1,604,167	204.17	122.50	81.67	408	[illegible]
Mangoes	43.33	26.00	17.33	87	433,333	56.33	33.80	22.53	113	[illegible]
Artichokes	126.33	75.80	50.53	253	1,263,333	166.67	100.00	66.67	333	[illegible]
Asparagus	84.17	50.50	33.67	168	841,667	108.33	65.00	43.33	217	[illegible]
Pepper	68.75	41.25	27.50	138	1,375,000	87.50	52.50	35.00	175	[illegible]
Total Annual Return					[illegible]					[illegible]

Exchange rate (1 US$= 5.50 LE) 4.50 LE

* All prices are calculated on Factory Gate prices basis
* Primary Market is USA
Secondary Markets are Local Market, EU and GCC countries

Expected Annual Returns at Full Capacity

Product	Year Five					Year Six				
	Sales Strategy*			Volume	Gate Value	Sales Strategy*			Volume	Factory Gate
	Primary Market	Secondary Markets	Local Market	Ton	US	Primary Market	Secondary Markets	Local Market	Ton	US
Preserved Olives	1,936.25	1,162.75	775.50	3,872	[illegible]	1,936.25	[illegible]	[illegible]	[illegible]	[illegible]
Marinated Vegetables										
Lemon	177.08	106.25	70.83	354	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Cucumber	106.25	106.25	141.67	354	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Tomatoes	212.50	127.50	85.00	425	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Grape Leaves	83.00	83.00	113.33	283	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Onions	298.33	179.00	119.33	597	[illegible]	298.33	[illegible]	[illegible]	[illegible]	[illegible]
Garlic	298.33	179.00	119.33	597	[illegible]	298.33	[illegible]	[illegible]	[illegible]	[illegible]
Mushrooms	198.33	119.00	79.33	397	[illegible]	198.33	[illegible]	[illegible]	[illegible]	[illegible]
Cauliflower	212.50	127.50	85.00	425	[illegible]	212.50	[illegible]	[illegible]	[illegible]	[illegible]
Mixed Vegetables	247.92	148.75	99.17	496	[illegible]	247.92	[illegible]	[illegible]	[illegible]	[illegible]
Mangoes	70.83	42.50	28.33	142	[illegible]	70.83	42.50	28.33	142	[illegible]

Costs of producing such returns include both investment cost and running costs as indicated in the following tables.

Project Initial Investment Cost

Cost Item	Area M^2	Cost/Unit LE	Total cost LE	%
Land	10,000	100	1,000,000	5.19%
Admin. Buildings	1,000	250	250,000	1.30%
Production Facilities & Infrastructure	5,000	250	1,250,000	6.48%
Raw Material Storage Facilities	1,000	200	200,000	1.04%
Civil Works (Water, Drainage, etc.)		500,000	500,000	2.59%
Power Stations		250,000	250,000	1.30%
Production Lines Cost			15,186,130	78.78%
Office Supplies		90,000	90,000	0.47%
Transportation Units		500,000	500,000	2.59%
Pre-operating Cost			50,000	0.26%
Total Investment Cost			19,276,130	100%
Working Capital			6,130,708	
Hedging (5%)			1,270,342	
Total Production Facility Cost			**25,406,838**	

Production lines include fermentation tanks

Recurrent inputs (Year One)

Cost Item (LE)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Raw Material (LE)	106,250	102,083	62,083	52,083	38,583	37,500	18,333	13,583	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Packaging Materials * (LE)	75,652	75,652	75,652	75,652	75,652	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Filling Materials (LE)	113,478	113,478	113,478	113,478	113,478	113,478	113,478	90,783	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Direct labor (LE)	10,625	10,625	7,250	7,250	5,500	5,750	7,500	7,167	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Power Consumption (LE)	11,860	11,225	8,725	8,725	6,250	6,125	8,417	7,833	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Water Consumption (LE)	5,313	5,194	2,604	2,604	1,875	1,875	2,917	2,500	2,688	2,688	[illegible]	[illegible]	[illegible]
Sales & Marketing (LE)	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	[illegible]	[illegible]	[illegible]	[illegible]
Research & Development (L	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	[illegible]
General & Administrative (LE	8,917	8,917	8,917	8,917	8,917	8,917	8,917	8,917	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Admin. Salaries (LE)	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	[illegible]
Maintenance (LE)	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	[illegible]
Insurance (LE)	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	[illegible]
Other (LE)													
Total (LE)	562,742	555,193	484,762	434,480	415,747	415,117	415,267	383,762	[illegible]	737,745	382,262	382,262	[illegible]

Recurrent inputs (Year Two)

Cost Item	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Raw Material	171,000	163,333	83,333	83,333	63,333	60,000	31,333	26,167	156,667	156,667	156,667	156,667	1,370,500
Packaging Materials *	121,043	121,043	121,043	121,043	121,043	121,043	121,043	96,522	121,043	121,043	121,043	121,043	1,323,000
Filling Materials	181,565	181,565	181,565	181,565	181,565	181,565	181,565	90,783	181,565	181,565	181,565	181,565	1,998,000
Direct labor	17,000	16,333	9,333	9,333	6,333	6,667	9,333	8,667	19,667	19,667	19,667	19,667	137,000
Power Consumption	18,700	17,867	9,167	9,167	6,667	6,500	10,667	9,083	17,833	17,833	17,833	17,833	150,000
Water Consumption	8,500	8,167	4,167	4,167	3,167	3,000	4,667	4,333	7,833	7,833	7,833	7,833	66,000
Sales & Marketing	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	95,000
Research & Development	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	36,000
General & Administrative	8,917	8,917	8,917	8,917	8,917	8,917	8,917	8,917	8,917	8,917	8,917	8,917	80,000
Admin. Salaries	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	735,220
Maintenance	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	963,806
Insurance	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	963,806
Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	759,542	748,185	647,345	647,345	622,745	617,947	628,943	475,940	739,745	739,745	739,745	739,745	8,063,533

Recurrent inputs (Year Three)

Cost Item	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Raw Material	233,750	224,583	114,583	114,583	87,083	82,500	128,333	35,917	215,417	215,417	215,417	215,417	1,883,750
Packaging Materials *	166,435	166,435	166,435	166,435	166,435	166,435	166,435	83,217	166,435	166,435	166,435	166,435	1,944,000
Filling Materials	249,652	249,652	249,652	249,652	249,652	249,652	249,652	124,826	249,652	249,652	249,652	249,652	[illegible]
Direct labor	23,375	22,458	12,833	12,833	8,708	9,250	12,833	11,917	27,042	27,042	27,042	27,042	[illegible]
Power Consumption	25,713	24,704	12,604	12,604	9,375	9,075	14,417	12,833	25,208	25,208	25,208	25,208	[illegible]
Water Consumption	11,688	11,229	5,729	5,729	4,354	4,125	6,417	5,833	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sales & Marketing	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	[illegible]
Research & Development	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	[illegible]
General & Administrative	8,917	8,917	8,917	8,917	8,917	8,917	8,917	8,917	8,917	8,917	8,917	8,917	[illegible]
Admin. Salaries	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	[illegible]
Maintenance	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	[illegible]
Insurance	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	[illegible]
Other	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]
Total	756,542	748,185	647,345	647,345	622,745	617,947	628,943	475,940	739,745	739,745	739,745	739,745	[illegible]

Recurrent Inputs (Year Four):

Cost Item	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Raw Material	297,500	265,833	145,833	145,833	145,833	125,000	160,333	46,667	274,167	274,167	274,167	274,167	2,337,500
Packaging Materials *	211,828	211,828	211,828	211,828	211,828	211,828	211,828	169,833	211,828	211,828	211,828	211,828	2,438,000
Filling Materials	317,739	317,739	317,739	317,739	317,739	317,739	317,739	186,870	317,739	317,739	317,739	317,739	3,654,000
Direct labor	29,750	28,583	14,583	14,583	11,083	10,500	16,333	4,667	27,417	27,417	27,417	27,417	238,750
Power Consumption	32,725	31,442	16,042	16,042	12,192	11,550	17,967	5,133	30,138	30,138	30,138	30,138	262,725
Water Consumption	14,679	14,290	7,290	7,290	5,542	5,250	8,167	2,333	13,708	13,708	13,708	13,708	119,471
Sales & Marketing	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	95,000
Research & Development	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	36,000
General & Administrative	8,917	8,917	8,917	8,917	8,917	8,917	8,917	8,917	8,917	8,917	8,917	8,917	107,000
Admin. Salaries	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	[illegible]
Maintenance	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	[illegible]
Insurance	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	[illegible]
Other	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Recurrent Inputs (Year Five):

Cost Item	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Raw Material	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Packaging Materials *	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Filling Materials	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Direct labor	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Power Consumption	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Water Consumption	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sales & Marketing	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Research & Development	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
General & Administrative	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Admin. Salaries	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Maintenance	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Insurance	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

The model is constructed to determine profitability and cash flow. The two key results of the model are the amount of equity capital required and the "return on investment" on that equity. The project financial model determines the effect on equity required and returns on investment of variations in cost variables. It is used to determine the effect of changes in other variables, e.g. key inputs such as raw material, labor and electricity.

The model clearly indicates the financial viability of the project as indicated in the following table.

FINANCIAL ANALYSIS RESULTS

Static Analysis:

For a typical year or season of production, once the enterprise has been established

Revenue (LE)	32,156,333	per	Year
Less Recurrent Inputs	-13,940,008	per	Year
= Gross Margin (LE)	18,216,325	per	Year
=	1 return on recurrent inputs only		
Less Investment in annualised	-7,210,075	per	Year
= Net Margin (LE)	11,006,250	per	Year
=	1 return on investment & recurrent inputs		

Sensitivity Analysis:

Gross Margin = 0 when:	Revenue (LE) is reduced by	57%
	Recurrent Inputs are increased by	131%
Net Margin = 0 when:	Revenue (LE) is reduced by	34%
	Recurrent Inputs are increased by	79%
	Investment Inputs is increased by	153%

Demand Sensitivity:	Y / N	Recommendation
Is there an established market for the product?	y	(Good - go to next question)
Is this market readily accessible?	y	(Good - go to next question)
Will the produce volume upset market stability?	n	(Good - go to next question)
Will the produce volume affect market price?	n	(Good - go to next question)
Is the market likely to strengthen with time?	y	(Good - robust solution)
Are new markets likely to emerge with time?	y	Investigate development of these markets

The "return on investment" is calculated as the internal rate of return on the net cash flows of the operation over 15 years (which takes into account of the

12 month period assumed for receipt of sales income). The internal rate of return is only **one measure** of "return on investment". It is used here to provide a convenient measure of the effect of changes in key variables on the overall return of the project over an extended period. The IRR determined for the base case in the model is 52% per annum. That is, by any measure, a very acceptable return for a long-term high-risk business.

1

Market Analysis & Marketing Plan

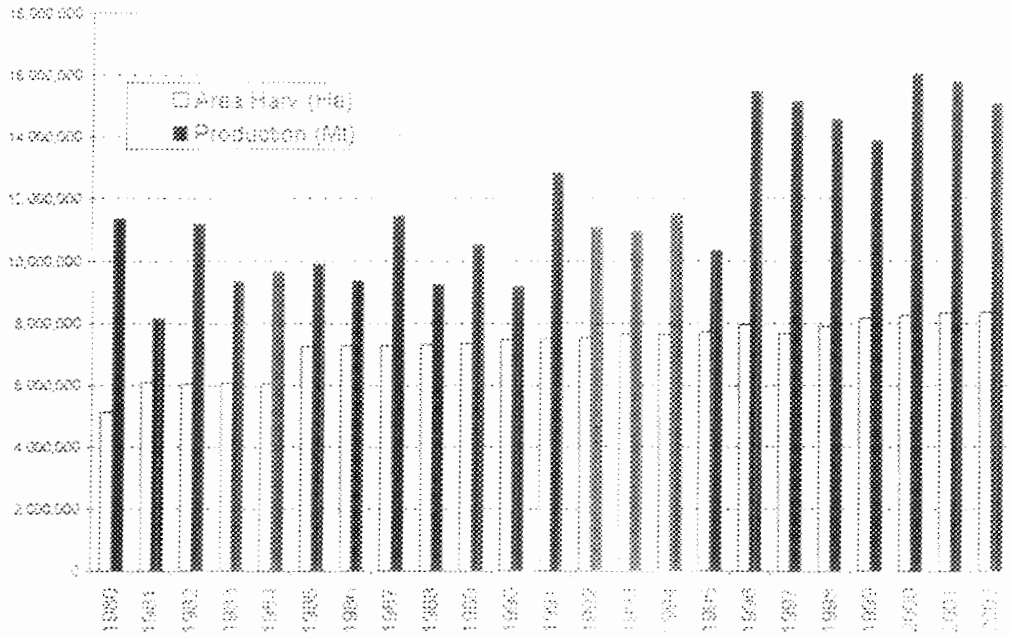
Export Market Analysis, Opportunities, and the Competitive Intelligence Analysis

Olives

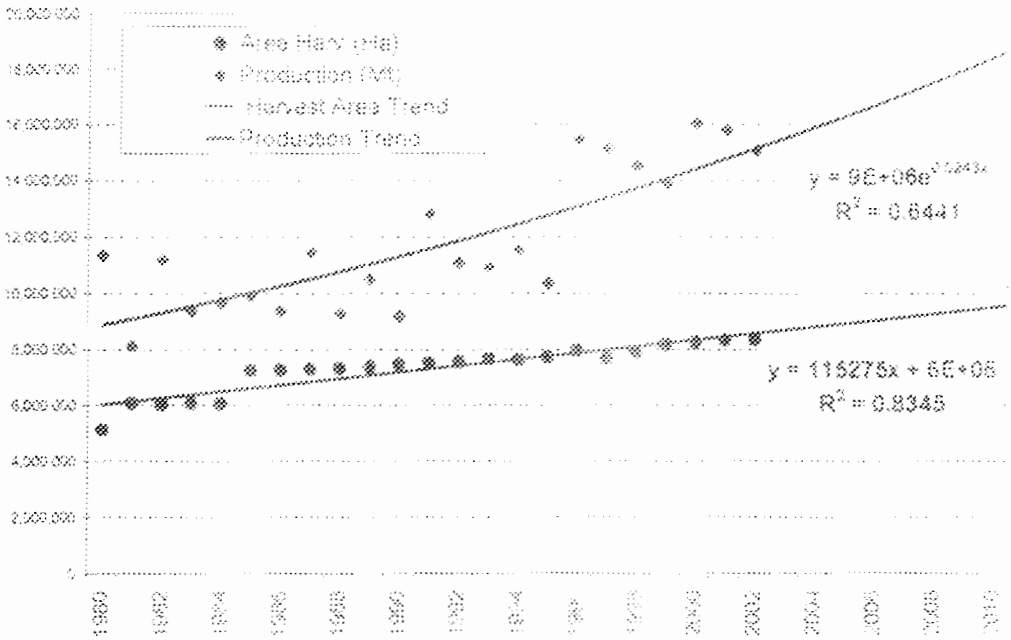
World Production of Raw Olives

World production of raw olives in 2002 reached a record level of more than 15 million tonnes. This record harvest was mainly the result of favourable weather in olive producing countries, particularly Spain. In 2002 production fell by 12.5 per cent however it was still well above the 1995-2000 average.

World Raw Olive Production, 1980 - 2001



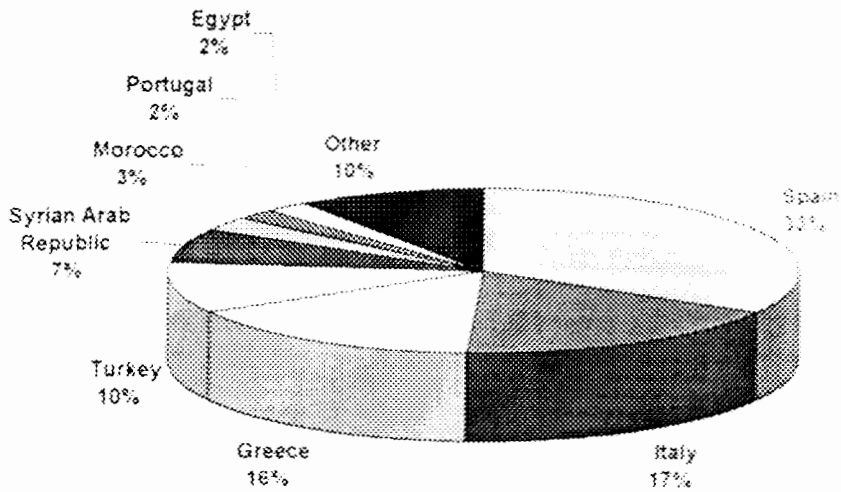
World Raw Olive Production Expected Growth Trend, 1980 - 2010



According to this data it is expected for olive harvested area to reach a record of 9 million hectares by 2010 while production volume is expected to record a level of 19 million ton.

Spain and Italy are by far the major olive producing countries, with 33 per cent and 17 per cent respectively of total world production in 2002. Greece (16%), Turkey (10%) and Syrian Arab Republic (7%), Morocco (3%), Portugal (2%), and Egypt (2%) are also major producers. In terms of area harvested, Spain held first place in 2002 with 28 per cent of the total. Spain had more than 167 million trees planted in 1990.

World Raw Olives Major Producers in 2002



According to the IOOC there are 789 million trees worldwide, 95 per cent of them in the Mediterranean region (Mesa). European estimates in 1998 indicate that there were 460 million productive trees in the European Union and around 2 million farms engaged mainly in olive growing (EC).

The European Commission recently expressed concern at the record levels of olive production. According to the Commission 'when new trees come into production (which can take three or four years), there is the serious risk that European production would outstrip demand at home and abroad' (Smith, EC)

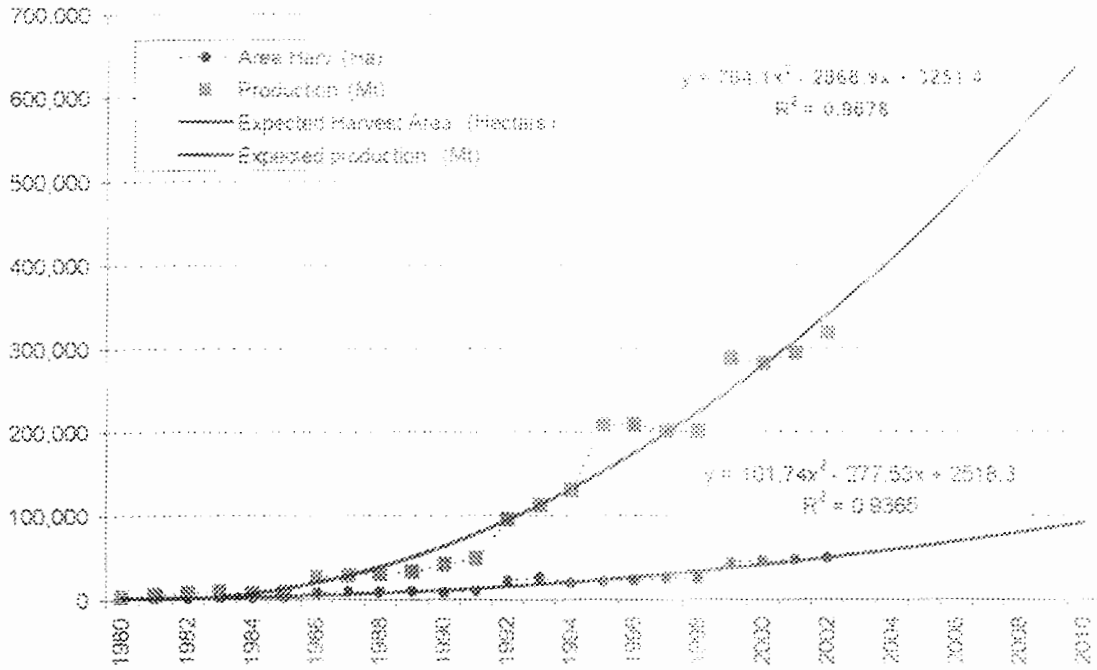
Egypt Olive Production and Trends

Egypt is ranked number 8 in the top olive producer's world wide with a record of 318 thousand metric ton in 2002. Area harvested and production showed very rapid increase in the last few years and expected to increase significantly within the next few years. New olive cultivations in the new land areas is expected to place Egypt as the third most important producing country of olives by the year 2010.

Harvested area is expected to record a level of 100 thousand hectares and production volume is expected to reach more than 800 Thousand metric ton by the year 2010 as indicated the following graph. These expectations is supported by the following factors

- Expected increase of land devoted for olive production in the new Meja projects in Tushkey and Awiant.
- Tendency of producers to grow new superior varieties with high yield

Egypt Olive Production and Expectations



Egypt has one of the highest olive yields in the region – about 5.37 t/ha (McEvoy et al.). The main olive-producing areas are in the north-west coastal region between Alexandria and Salum; the most popular variety is Chemlal, but some Kalamata, Hamid and Mission are also produced.

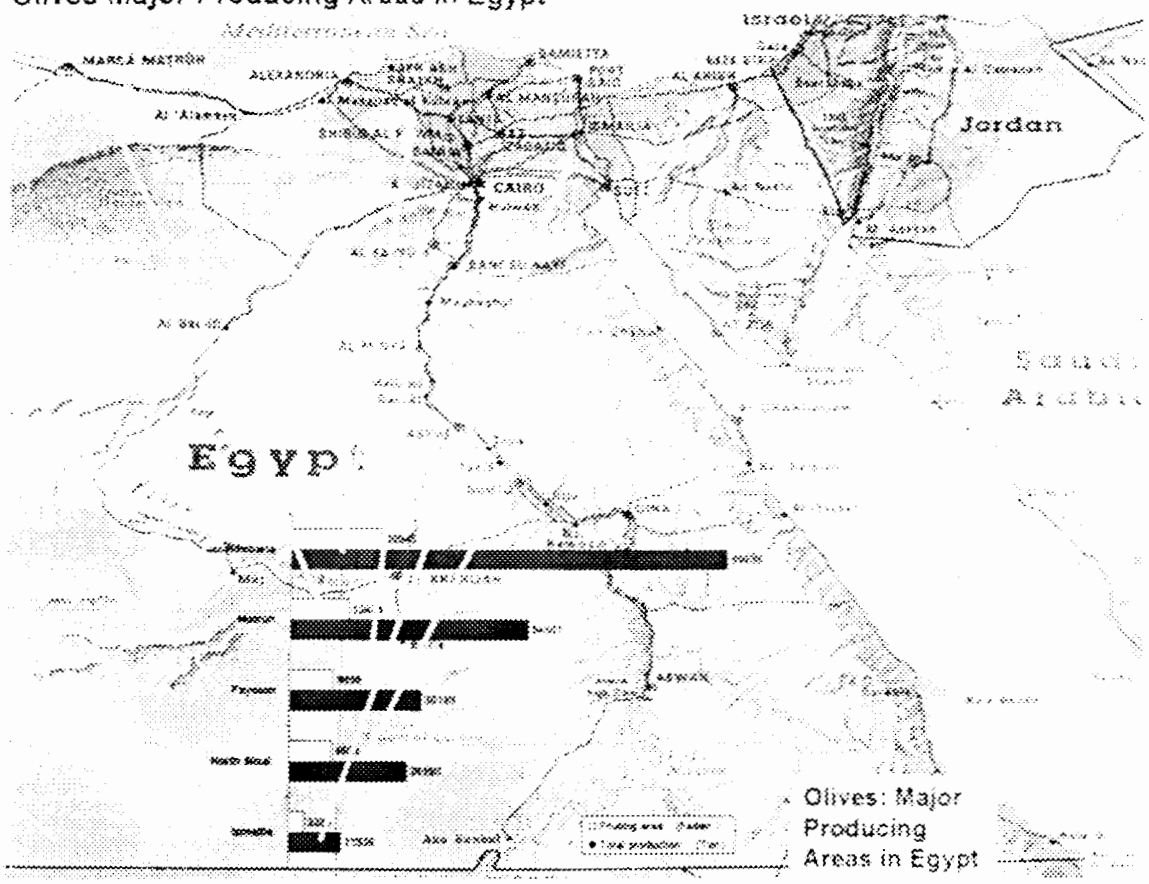
Olive yields per tree vary between 10 kg and 35 kg, depending on the system of irrigation used. Some areas in the Marthrug region reach 50 kg to 60 kg per tree (15-year-old trees under irrigation). In 2002 Egypt had 9.2 million trees, most of them producing table olives for local consumption.

Egypt olive industry is oriented towards the production of table olives, mainly for the local market. On occasions, Egypt has also had to import olives to meet its requirements. Most of its olive product trade is in preserved olives, with Spain the main export market and France and Germany minor destinations.

The government has taken measures to improve olive cultivation. Amongst such measures are the new orchards being planted under the General Organization for the Development of the Desert programs. It is estimated that there are 8.4 million trees not yet of bearing age, and a further planting of around 1.4 million trees is planned in the near future.

The processing of olive still uses traditional methods and equipment. However, there is a trend towards modernisation of the processing sector and the construction of more modern facilities.

Olives Major Producing Areas in Egypt



World Table Olive Market

The market for table olives during the last few years exhibited significant increase in both production and consumption. Production reached 1 082 500 tonnes, 20 per cent above the average for the period 1992-2002 to 1990-91. World consumption has risen [illegible] cent above the 1990s average. Production of table olives in 2002 exceeded consumption. However, according to the IOOC this is not likely to continue as the increase in consumption of the past 6 years is expected to continue.

In the 1990-2002 crop year world production of table olives was dominated by Spain (23.7%). Other significant producers were Turkey (18%), the United States (13.3%) and Morocco (9.7%). The major consuming countries were the United States and Turkey each 15%, Italy (11%) and Spain (10%).

Traditionally, green olives are the main type of table olive produced worldwide, followed by black olives and olives turning colour. Although world production of table olives was expected to fall during the 2001/2002 crop year, production of green olives was forecast to increase by 2.5 per cent. Consumption of olives turning colour was expected to remain constant in 2001/2002, while consumption of black olives and green olives was expected to rise by 10.2 per cent and 1.7 per cent respectively, compared with the previous levels.

A closer examination of the production figures indicates that world production of green olives is dominated by Spain (39%), Syria (12%) and Morocco (10%). Turkey (40%), Morocco (12%), Greece (10%) and Italy (10%) dominate production of black olives. The main producers of olives turning colour are the United States (56%) and Spain [illegible]

Table Olive Production by Country

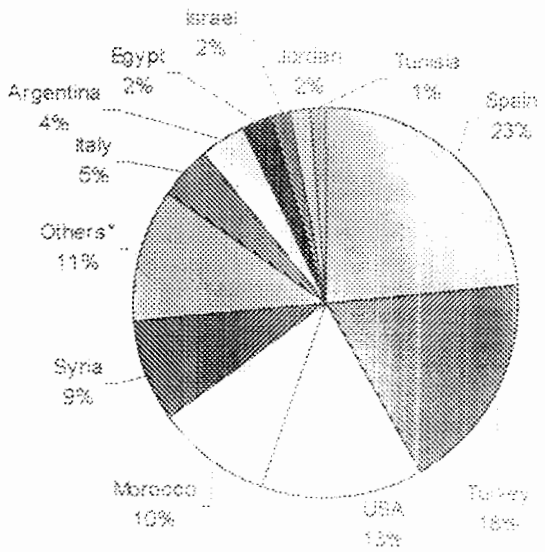
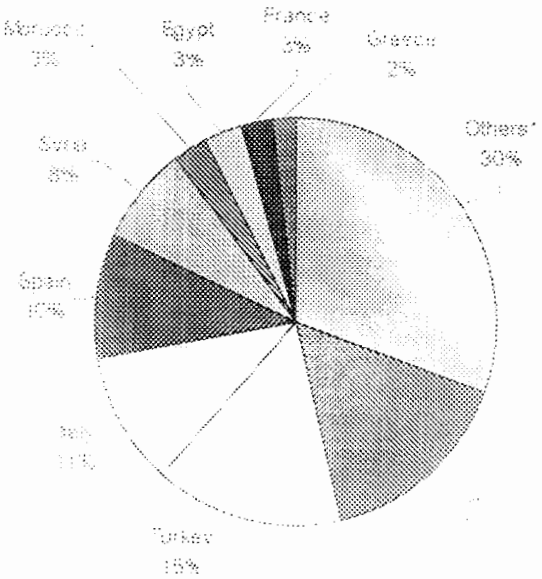
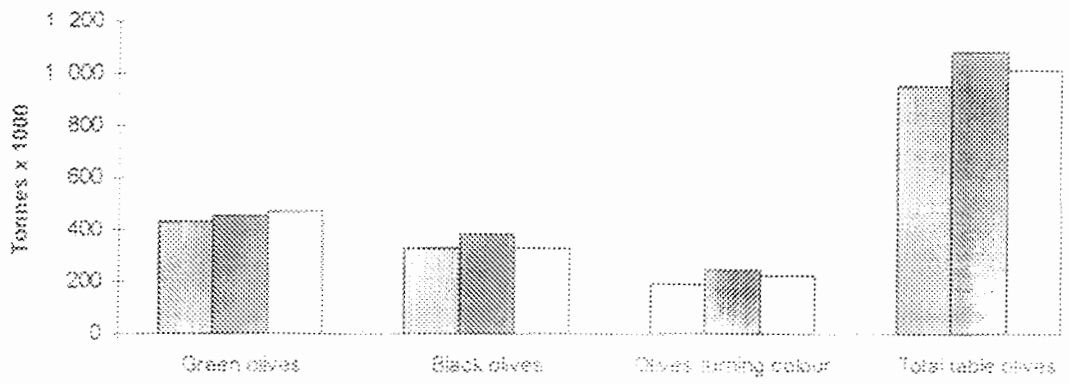


Table Olive Consumption by Country

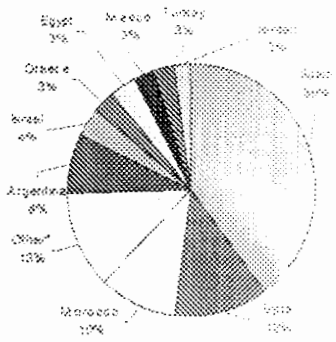


* Producing/consuming less than 15 000 tonnes

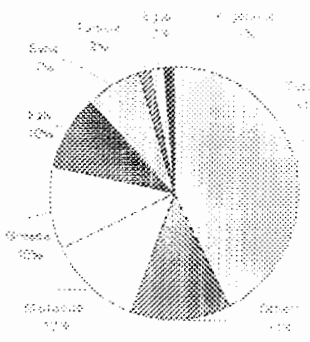
Production of Table Olives by Type



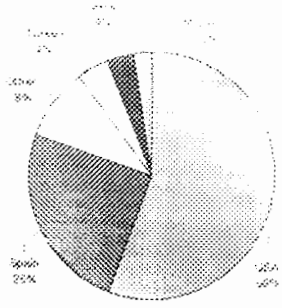
Production of Green Olives



Production Black Olives

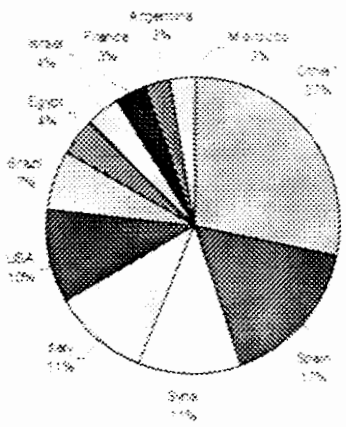
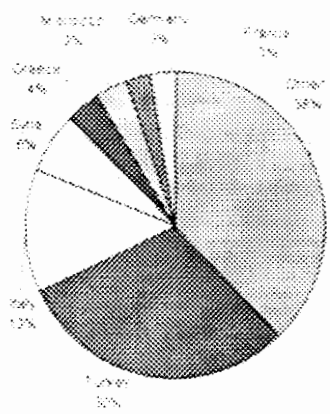
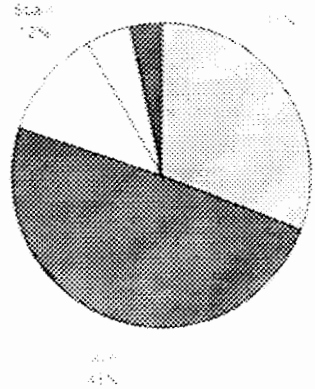


Production of Olives Turning Colour



** Producing less than 10 000 tonnes*

Spain (17%) heads world consumption of green table olives followed by Syria [illegible] Italy (11%) and the U S (10%). Turkey (30%) dominates consumption of black with Italy (13%) and Syria (6%) also significant users. The main consumers [illegible] turning colour are the U S (46%) and Spain (12%).

Consumption of Green Olives	Consumption of Black Olives	Consumption of Olives Turning Colour
		

Consuming less than 10 000 tonnes ; *consuming 5 000 tonnes or less*

On a per capita basis Syria dominates world consumption of table olives [illegible] Spain, Greece, Italy and Turkey. The United States, Australia and Canada [illegible] recorded modest increases in per capita consumption.

Per Capita Consumption of Table Olives (kg)					
Country	1997	1998	1999	2001 (proj.)	[illegible]
Syria	5.56	5.40	5.07	5.46	[illegible]
Spain	3.04	2.98	2.93	2.52	[illegible]
Greece	2.03	2.88	2.87	1.91	2.38
Italy	2.27	1.98	2.19	1.87	2.07
Turkey	1.51	2.25	2.12	2.46	2.12
Morocco	1.43	1.31	1.09	1.07	1.05
USA	0.61	0.62	0.67	0.59	0.60
Australia	0.51	0.57	0.53	0.55	0.60
Canada	0.47	0.55	0.49	0.57	0.57
Japan	0	0	0.01	0.02	0.02

World Trade in Table Olives

For the 2001/2002 crop year, exports of table olives were expected to total more than 480 000 tonnes. Spain is by far the largest exporting country (39%) followed by Morocco (19%).

Main Table Olive Exporting Countries (tonnes x 1000)							
Country	1995/1996	1996/1997	1997/1998	1998/1999	1999/2000	2000/2001 (prov.)	2001/2002 (est.)
Spain	134.5	136.9	113.8	107.8	110.3	130.0	135.0
Morocco	50.0	45.0	50.0	71.0	80.0	68.0	65.0
Greece	35.0	35.0	30.0	40.0	55.0	50.0	45.0
Argentina	20.0	26.0	25.0	28.0	20.0	24.0	20.0
Turkey	12.0	13.0	15.0	28.0	22.0	28.0	[illegible]
Mexico	14.0	6.5	8.5	5.5	5.0	5.0	[illegible]
USA	3.0	1.0	9.0	10.0	4.0	10.0	[illegible]
Others	11.7	17.4	20.7	32.4	32.8	28.7	
Total	280.2	279.8	272.0	308.7	320.8	341.3	[illegible]

The main importing countries are the United States (25.4) and Italy (14%).

Main Table Olive Importing Countries (tonnes x 1000)							
Country	1995/1996	1996/1997	1997/1998	1998/1999	1999/2000	2000/2001 (prov.)	2001/2002 (est.)
USA	76.0	75.0	71.0	88.0	72.5	77.0	80.5
Italy	51.7	75.3	49.2	48.0	47.6	57.0	60.0
Brazil	20.0	21.0	30.0	32.0	26.0	35.0	35.0
France	35.4	28.6	26.1	31.9	30.5	28.0	28.0
Germany	16.5	16.5	17.0	19.7	23.5	23.3	24.0
Canada	10.5	13.0	13.5	16.0	14.5	17.0	17.0
Australia	6.0	6.5	7.0	8.0	7.5	8.0	9.0
Others	67.4	36.6	75.2	60.4	101.2	104.7	100.8
Total	283.5	271.4	288.0	310.0	322.2	350.0	350.3

United States as A Major Market for Project Products:

Market Brief

United States olive growers cannot supply the domestic demand for olives. More than ninety-nine percent (99%) of the table olives grown in the United States are produced in California. There were one thousand two hundred twenty-five (1225) California olive growers in 1997. Over two thirds of these growers have less than two acres. Only five growers have more than five hundred acres. The value of California olives produced in 1997 reached $66.8 million - less than twenty-five percent (25%) of the domestic demand for olives. In the face of increasing demand for table olives in the United States California olive producers' market share continues to decline. These producers have carved a high premium niche for themselves, selling their California olives to the high-end markets under recognized, high value brand names.

Total U.S. imports of olives reached a level of $224.3 million (CIF value) in 1999, up 12 percent over the1998 level of $200.1 million. This increase was due to higher average CIF import values and a slight increase in the total quantity imported during CY 1999, compared to year earlier levels. Total quantities of olives imported into the U.S. market have increased 20 percent over the last five years to 94,245 MT in CY 1999.

U.S. imports of olive products are classified under the U.S. Harmonized Tariff Schedule into 34 different categories. Green, whole stuffed olives in containers less than 8 kg represented almost 39 percent of total U.S. imports of olives, totaling $86.9 million in CIF value during 1999. The second largest category of import trade on the U.S. market is for sliced black olives in a can. These totaled $32.6 million in CIF value during 1999, representing 14.5 percent of total U.S. imports of olives.

Black whole olives and green broken or sliced, salad style olives were the third and fourth largest import categories, totaling $26.5 million and $17.5 million respectively. Whole green stuffed olives in HRI packs (larger than 8 kg) totaled $12.2 million.

These five import categories accounted for 78 percent of the total CIF value of U.S. imports of olives during CY 1999.

Spain is the dominant supplier of olives to the U.S. market, exporting $164.6 million (CIF value) and representing 73.4 percent market share of total U.S. imports of olives. Greece was the second largest supplier of olives to the U.S. market, with trade valued on a CIF value basis at $31.9 million during 1999. This represented a CIF market share in CY 1999 of 14.2 percent.

Morocco was the third leading exporter of olives to the U.S. market during CY 1999. Last year, the U.S. imported $24.3 million (CIF value) in olives from Morocco. During CY 1999, Morocco's CIF value market share of the total U.S. olive import market was 10.8 percent.

These top three supplying countries therefore supplied 98.4 percent of total U.S. imports of all olive products, on a CIF value basis. The volume of their CY 1999 exports of olive products to the U.S. market totaled 84,065 MT, which accounted for 89.2 percent of the total tonnage imported last year.

Egypt has shipped only very limited quantities of olives to the U.S. market over the five-year period covering calendar years 1995 through 1999. The largest shipments over this period occurred in CY 1996, when 17 MT were exported at a CIF value of $37,000. Shipments amounting to only a few thousand Dollars took place in calendar years 1995, 1997 and 1999.

But the Egyptian export market for olives is growing, albeit not to the United States. One major classification accounted for 86% of the total exports by volume and 75% by value, increasing by 14% in value and 15% by volume over 1998.

It is clear that Egypt has the capacity to produce olives in sufficient quantities to at least attempt to gain entry in the US market. Only a 1% market share of the US imports represents a 943MT export potential, but represents less than one half of 1% of Egyptian production. At an average price of $1.75/kg, a 1% market share would represent olive export sales from Egypt in excess of $1,650,000.

One area where Egypt is faring well is with pitted green olives sold to Spain at an average price of $1.00 kg. But these same olives are sold by Spain, depending on HTS code, to the United States at considerably higher price points.

Based on this preliminary analysis of the U.S. import trade in olives, Egyptian olive exporters will have to aggressively market their products on the U.S. market, and will most probably need to offer delivered export price levels that are highly competitive with those from Spain, Greece, and Morocco. Since Egypt is not currently a player on the U.S. market for olives, exporters will most likely need to be in a position to offer landed export prices at levels below those of their competitor companies in Spain, Greece and Morocco, in order to develop any significant new long-term export business.

Then they must be prepared to back up their pricing with desirable packaging and customer relations. Getting the olives to market at a competitive price, in a master container that does not fall apart, in a package the consumer wants and with vigorous

follow-up and after sales service should be a winning combination to sustainable olive sales to the United States of America!

U.S. Market Dynamics for Olives and Potential For Egypt

According to official calendar year (CY) 1999 import statistics, total U.S. imports of olives reached a level of $224.3 million (CIF value) last year, up 12 percent over the CY 1998 level of $200.1 million. This increase was due to higher average CIF import values and a slight increase in the total quantity imported during CY 1999, compared to year earlier levels. Total quantities of olives imported into the U.S. market have increased 20 percent over the last five years, from a level of 78,291metric tons (MT) during CY 1995 to 94,245 MT in CY 1999.

The largest category of import trade on the U.S. market is for Olives, Green, Whole, Stuffed, In Containers Less Than 8 KG, In Saline Solution, Not Frozen, which totaled $86.9 million in CIF value during CY 1999, representing almost 39 percent of total U.S. imports of olives.

The second largest category of import trade on the U.S. market is for Olives, Not Green In Color, Sliced, Canned In A Saline Solution, Not Frozen, which totaled $32.6 million in CIF value during CY 1999, representing 14.5 percent of total U.S. imports of olives.

These two largest import categories are followed by: Olives, Not Green In Color, Not Canned, In Saline Solution, Not Frozen, NESOI ($26.5 million); Olives, Green, Broken, Sliced Or Salad Style, Containers Holding Less Than 8 KG, In A Saline Solution, Not Frozen ($17.5 million); and Olives, Green, Whole, Stuffed, In Saline Solution, In Containers Holding More Than 8 KG Each, Not Frozen ($12.2 million).

These five import categories accounted for 78 percent of the total CIF value of U.S. imports of olives during CY 1999.

U.S. imports of olive classified under the U.S. Harmonized Tariff Schedule into 34 different categories. The total CIF values of U.S. imports during CY 1999 by tariff classification categories are given below. The rankings are offered as a quick guide for the purposes of Egyptian olive exporters to determine market potential for their product.

USHTS Code	Product Description	1999 Imports ($1000 CIF)	Ranking (Value)
0709903500	Olives, Fresh Or Chilled	$ 2,463	13
0711201800	Olives, Not Pitted, Green In Color, In A Saline Solution > 8 Kg, Drained Weight, Used For Repacking Or Sale, Described In Additional U.S. Note 5 To This Chapter 7 And Entered Pursuant To Its Provisions	118	29
0711202800	Olives, Not Pitted, Green In Color, In A Saline Solution, In Containers > 8 KG, Drained Weight, To Be Used As Repacking Or Sale As Green Olives, NESOI	55	31
USHTS Code	Product Description	1999 Imports ($1000 CIF)	Ranking (Value)

0711203800	Olives, Not Pitted, NESOI	1,073	16
0711204000	Olives, Pitted Or Stuffed, NESOI, Provisionally Preserved, But Unsuitable In That State For Immediate Consumption	321	23
0712901500	Olives, Not Ripe, Dried, Whole, Cut, Sliced, Broken Or In Powder, But Not Further Prepared	271	26
0712902000	Olives, Ripe, Dried, Whole, Cut, Sliced, Broken Or In Powder, But Not Further Prepared	497	21
2005700230	Olives, Green, Not Pitted, In A Saline Solution, Ripe, Containers > 8 KG But < 13 KG Each, In An Aggregate Quantity Not To Exceed 730 Metric Tons Any Year	0	34
2005700260	Olives Green In Color Not Pitted, In Solution, Ripe, In Containers Holding 8 KG Or Less, In An Aggregate Quantity Not To Exceed 730 Metric Tons In Year	57	30
2005700430	Olives, Green, Not Pitted, In A Saline Solution, Ripe, In Containers Each Holding < 8 KG But < 13 KG, Drained Weight, NESOI, Not Frozen	190	28
2005700460	Olives Green In Color Not Pitted, In Saline Solution, In Containers Holding 8 KG Or Less, NESOI	212	27
2005700600	Olives, Green, Not Pitted, In Saline Solution, In Containers Each Holding > 8 KG, Described In Additional Note U.S. Note 4 To This Chapter 20 And Entered Pursuant To Its Provisions	2,005	14
2005700800	Olives Green In Color, Not Pitted, In Containers Each Holding More Than 8 KG, NESOI	300	25
2005701200	Olives, Green, Not Pitted, In Saline Solution, NESOI, Not Frozen	6,161	6
2005701600	Olives, Green In Color Place, Packed Stuffed In Saline Solution, Containers Each Holding Not More Than 1 KG, In An Aggregated Quantity < 2700 Metric Tons Each Year	5,624	7

USHTS Code	Product Description	1999 Imports ($1000 CIF)	Ranking (Value)
2005701800	Olives, Green In Color, Pitted Or Stuffed, Place Packed, In Saline Solution, Stuffed, In Containers Each Holding Not More Than 1 KG, Drained, NESOI	309	24
2005702300	Olives, Green In Color, Pitted Or Stuffed, Place Packed, In A Saline Solution, NESOI	648	18
2005702510	Olives, Green, Whole, Pitted, In Saline Solution, In Containers Holding More Than 8 KG Each, Not Frozen	3,933	10
2005702520	Olives, Green, Whole, Stuffed, In Saline Solution, In Containers Holding More Than 8 KG Each, Not Frozen	12,174	5
2005702530	Olives, Green, Broken, Sliced Or Salad Style, In Containers Holding More Than 8 KG Drained Weight, In A Saline Solution	2,695	12
2005702540	Olives, Green, Whole, Pitted, In Containers Holding Less Than 8 KG, In Saline Solution, Not Frozen	3,335	11
2005702550	Olives, Green, Whole, Stuffed, Containers Less Than 8 Kg, In Saline Solution, Not Frozen	86,881	1
2005702560	Olives, Green, Broken, Sliced Or Salad Style, Containers Holding Less Than 8 KG, In A Saline Solution, Not Frozen	17,468	4
2005705030	Olives, Not Green In Color, Not Pitted, Canned In Saline Solution, Containers Holding More Than 0.3 KG Each	632	19
2005705060	Olives, Not Green In Color, Not Pitted, Canned In Saline Solution, Containers Holding 0.3 KG Or Less, Not Frozen	49	32
2005706020	Olives, Not Green In Color, Whole Pitted, Canned In Saline Solution, Containers Holding More Than 0.3 KG Each, Not Frozen	4,237	9
2005706030	Olives, Not Green In Color, Whole Pitted, Canned In Saline Solution, Containers Holding 0.3 KG Or Less, Not Frozen	1,837	15
2005706050	Olives, Not Green In Color, Sliced, Canned In A Saline Solution, Not Frozen	32,552	2

USHTS Code	Product Description	1999 Imports ($1000 CIF)	Ranking (Value)
2005706060	Olives, Not Green In Color, Chopped Or Minced, Canned In A Saline Solution, Not Frozen	7	33
2005706070	Olives, Not Green In Color, Other, Including Wedged Or Broken, Canned in Saline Solution, Not Frozen	4,704	8
2005707000	Olives, Not Green In Color, Other Than Canned, In Airtight Containers Of Glass Or Metal, In Saline Solution, Not Frozen	948	17
2005707500	Olives, Not Green In Color, Not Canned, In Saline Solution, Not Frozen, NESOI	26,501	3
2005709100	Olives, Green, Prepared/Preserved Otherwise Than In Saline Solution, Not Frozen, Each Container Holding Less Than 13 KG, In An Aggregate Quantity > 550 Metric Tons A Year	626	20
2005709300	Olives, Prepared Or Prepared Otherwise Than In Saline Solution, Not Frozen, NESOI	434	22
	TOTAL	$224,317	

Major Suppliers of Olives to the U.S. Market

Spain is by far the dominant supplier of olives to the U.S. market. During CY 1999, Spain exported $164.6 million (CIF value) of olives to the U.S. market, representing 73.4 percent of total U.S. imports of olives. During CY 1999, this trade increased 15 percent, up from $142.1 million during CY 1998. In terms of tonnage, Spain exported 62,098 MT during CY 1999, accounting for almost 66 percent of the total 94,245 MT the U.S. imported from all sources.

Greece was the second largest supplier of olives to the U.S. market, with trade valued on a CIF value basis at $31.9 million during CY 1999, up 8.8 percent over year earlier levels. This represented a CIF market share in CY 1999 of 14.2 percent of the total U S import market for olives. In terms of tonnage, Greece exported 11,006 MT, representing 11.7 percent of the total quantity imported by the U.S. in CY 1999.

Morocco was the third leading exporter of olives to the U.S. market during CY 1999 Last year, the U.S. imported $24.3 million (CIF value) in olives from Morocco, which was up 12.1 percent over the level of $21.7 million imported by the U.S. during CY 1998 During CY 1999, Morocco's CIF value market share of the total U.S. olive import market was 10.8 percent. Total tonnage of olives exported by Spain to the U.S. market during CY 1999 was 10,961 MT, representing 11.6 percent of the total quantity imported by the U.S. during CY 1999.

These top three supplying countries therefore supplied 98.4 percent of total U.S. imports of all olive products, on a CIF value basis. The volume of their CY 1999 exports of olive products to the U.S. market totaled 84,065 MT, which accounted for 89.2 percent of the total tonnage imported last year.

Spain

The U.S. import market for olives is dominated by Spain, which supplied 73.4 percent of the total trade in these products. During CY 1999, the U.S. imported 62,098 MT of olives Spain, at a CIF value of $164.6 million, which represented an increase of 15 percent in terms of CIF value over the CY 1998 trade level.
The largest product in Spain's olive trade with the U.S. during CY 1999 was Olives, Green, Whole, Stuffed, In Containers Less Than 8 Kg, In Saline Solution, Not Frozen. Spain was also the dominant supplier to the U.S. market within this tariff classification category, shipping 98.5 percent of total U.S. imports of this olive product, at a CIF value of $85.6 million. Average CIF import prices from Spain during CY 1999 for this olive product were $3.12 per kilogram.

The second leading olive product shipped by Spain to the U.S. market during CY 1999 was Olives, Not Green In Color, Sliced, Canned In A Saline Solution, Not Frozen. Spain was also the dominant supplier to the U.S. market within this tariff classification category, shipping 65.7 percent of total U.S. imports of this olive product, at a CIF value of $21.4 million. Average CIF import prices from Spain during CY 1999 for this olive product were $1.76 per kilogram.

The third leading olive product shipped by Spain to the U.S. market during CY 1999 was Olives, Green, Broken, Sliced Or Salad Style, Containers Holding Less Than 8 KG, In A Saline Solution, Not Frozen. Here again, Spain was also the dominant supplier to the U.S. market within this tariff classification category, shipping 90.4 percent of total U.S. imports of this olive product, at a CIF value of $15.8 million. Average CIF import prices from Spain during CY 1999 for this olive product were $2.32 per kilogram.

The fourth leading olive product shipped by Spain to the U.S. market during CY 1999 was Olives, Green, Whole, Stuffed, In Saline Solution, In Containers Holding More Than 8 KG Each, Not Frozen. As in the above three product categories, Spain was again the dominant supplier to the U.S. market within this tariff classification category, shipping 96.6 percent of total U.S. imports of this olive product, at a CIF value of $11.8 million. Average CIF import prices from Spain during CY 1999 for this olive product were $1.97 per kilogram.

Table below shows total U.S. imports of olive products, by USHTS code, from Spain during CY 1995—1999, as well as CY 1999 average CIF import prices and market share.

Greece

The second leading supplier of olives to the U.S. market is Greece, which had a market share on a CIF value basis of 14.2 percent last year. During CY 1999, the U.S. imported 11,006 MT of olives from Greece, at a CIF value of $31.9 million, which represented an increase of 8.8 percent in terms of CIF value over the CY 1998 trade level.

Even though Greece ships olives that enter the U.S. under many different tariff classification categories, most of this trade with the U.S. during CY 1999 was Olives, Not Green in Color, Not Canned, In Saline Solution, Not Frozen, NESOI. Total U.S. imports from Greece under this product category were $21.5 million during CY 1999, representing almost 77 percent of the total Greek olive trade with the U.S. last year. Greece was also the dominant exporter of this product category to the U.S. market last year, supplying almost 82 percent of total U.S. imports during CY 1999. Average CIF import prices from Greece during CY 1999 for this olive product were $2.42 per kilogram.

Table below shows total U.S. imports of olive products, by USHTS code, from Greece during CY 1995—1999, as well as CY 1999 average CIF import prices and market share.

Morocco

The third leading supplier of olives to the U.S. market is Morocco, which had a market share on a CIF value basis of 10.8 percent last year. During CY 1999, the U.S. imported 10,961 MT of olives from Morocco, at a CIF value of $24.3 million, which represented an increase of 12.1 percent in terms of CIF value over the CY 1998 trade level.

The largest product in Morocco's olive trade with the U.S. during CY 1999 was Olives Not Green in Color, Sliced, Canned In A Saline Solution, Not Frozen. Morocco was the second leading supplier to the U.S. market within this tariff classification category after Spain, shipping 34 percent of total U.S. imports of this olive product, at a CIF value of $11.1 million. Average CIF import prices from Morocco during CY 1999 for this olive product were $1.95 per kilogram, which was higher than the average CIF import price for this product from Spain last year, valued at $1.76 per kilogram on average.

The second leading olive product shipped by Morocco to the U.S. market during CY 1999 was Olives, Not Green In Color, Other, Including Wedged Or Broken, Canned In A Saline Solution, Not Frozen. Within this tariff classification category, Morocco was the leading supplier to the U.S. market, shipping 78.6 percent of total U.S. imports of this olive product, at a CIF value of $3.7 million. Average CIF import prices from Morocco during CY 1999 for this olive product were $1.67 per kilogram.

The third leading olive product shipped by Morocco to the U.S. market during CY 1999 was Olives, Not Green in Color, Not Canned, In A Saline Solution, Not Frozen, NESOI. Morocco's share of the U.S. import market within this tariff classification category was 5.6 percent of total U.S. imports of this olive product, with exports valued at $1.5 million on a CIF basis. Average CIF import prices from Morocco during CY 1999 for this olive product were $1.31 per kilogram. Within this product category, Greece is the leading supplier of this olive product to the U.S. market, with a market share of 81 percent on a CIF value basis during CY 1999. Average CIF import prices for this olive product from Greece last year were $2.42 per kilogram, significantly higher (85 percent) than the average CIF import price for this olive product from Morocco during CY 1999.

The fourth leading olive product shipped by Morocco to the U.S. market during CY 1999 was Olives, Green, Broken, Sliced Or Salad Style, In Containers Holding Less Than 8 KG, In A Saline Solution, Not Frozen. The total CIF value of Morocco's CY 1999 exports to the U.S. market for this olive product reached almost $1 million, up 108 percent over the level of CY 1998. This level of trade accounted for 5.7 percent of total U.S. imports of this olive product last year. Within this tariff classification category, Spain is the dominant supplier to the U.S. market, accounting for 90 percent of total U.S. imports on a CIF value basis during CY 1999. Average CIF import prices from Morocco during CY 1999 for this olive product were $1.80 per kilogram. Spain's average price, at $2.32 per kilogram, was significantly higher (29 percent) last year than Morocco's average CIF import price for this olive product.

Table below shows total U.S. imports of olive products, by USHTS code, from Morocco during CY 1995—1999, as well as CY 1999 average CIF import prices and market share.

The Competitive Intelligence Analysis

Although there has been an increase in olive production (and consumption) around the world, production is still highly concentrated in the Mediterranean region. The region is responsible for more than 95 per cent of world production and 90 per cent of total consumption. The crop generates regional employment and is an important source of income in rural areas, thereby reducing migration to urban areas It also provides ecological benefits by contributing to soil retention and reducing erosion Traditionally olive cultivation has been practised by small family-owned holdings on non-irrigated land using inefficient cultivation practices. This has resulted in low yields. However, in recent years governments, the EU and the IOOC have taken measures to modernise the industry

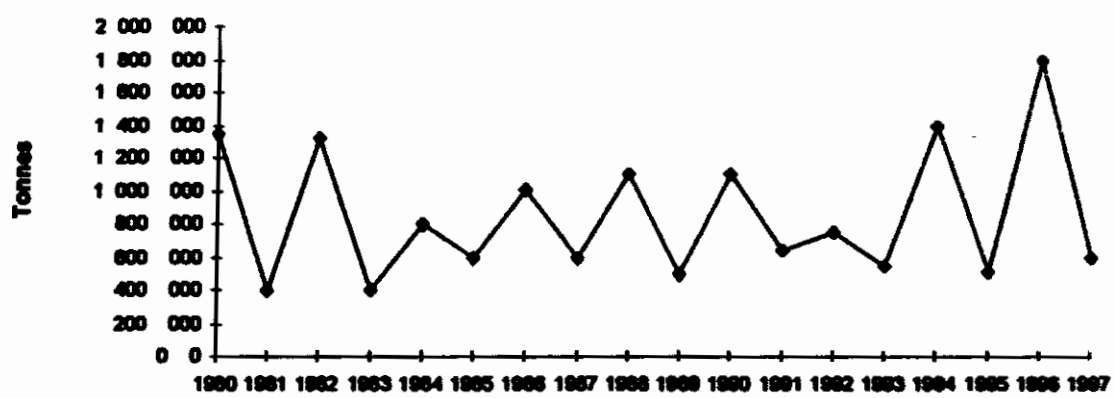
This section briefly introduces a description of the competitive position of the main olive producing countries. The section pays particular attention to the levels of production, trade and government assistance of the countries examined.

Turkey

Olive Production

Olives have always been an important industry in Turkey. Olive production in Turkey has varied signifi7cantly from year to year over the past 15-year period. Some have attributed these fluctuations to changing weather patterns, poorly managed olive groves, inefficient processing techniques and, more recently, inadequate marketing organisations (Akay and Dizdaroglu). Turkey's production of table olive more than doubled - from 100 000 to 216 000 tonnes in the past 5 years.

Turkey Olive Production, 1980-1997



It is estimated that Turkey has about 100 million trees in 323 986 holdings totalling 880 000 hectares, representing about 4 per cent of the country's agricultural land (Tunaliogu 1997). More than 60 per cent of olive plantations are between 10 and 80 years old 30 per cent are more than 80 years old and the remaining 10 per cent are less than 10 years old (Sahinalp 1997). Most of the olive production occurs around the Aegean area which has 75 per cent of the olive groves. The latest figures suggest that approximately 3 000 000 new trees will be planted in the near future, of which 83 per cent will be of the

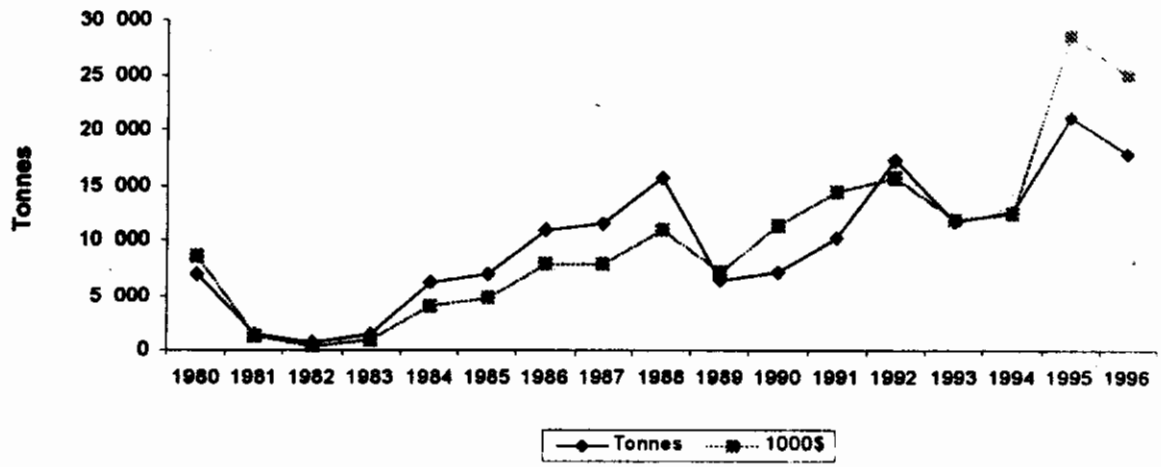
dual-purpose variety (IOOC 1997e). This will make Turkey a bigger player in the international market.

Trade

Turkey is one of the leading exporters of olive products. In 1996, it exported 17 700 tonnes (US$24.8 million) of olives. During the 1980s, Romania, Germany, Spain and Bulgaria have been the major export markets, while the United States is emerging as an important market.

The government has established an export tax refund system, whereby all taxes and duties paid on exports from the olive grove are refunded. Turkey enjoys preferential treatment with the EU, which entitles its products to enter the EU market at a much lower rate of duty.

Turkey Exports of Table Olive



The Industry

Most of Turkey's olive holdings are family-run enterprises. There are also approximately 1 000 small mills and about 10 refining plants. It is believed that the olive sector uses inefficient production methods and produces a poor quality product (Tunalioglu) Although there are some quality standards that producers must meet, it is reported that these are not strictly adhered to.

The industry is perceived as being fragmented: only 17.7 per cent of table olive producers belong to a cooperative. The two major cooperatives are the Marmara Birlik (Marmara Union) with 12 per cent of olive producers, and Taris with 5.7 per cent. Although the government is responsible for the development of the country's olive policy, these cooperatives play an important role in the sector, being responsible for the purchasing operations, storage and trade activities.

Recent Developments

There has been a process of technology transfer to Turkey from the industry in other European countries.

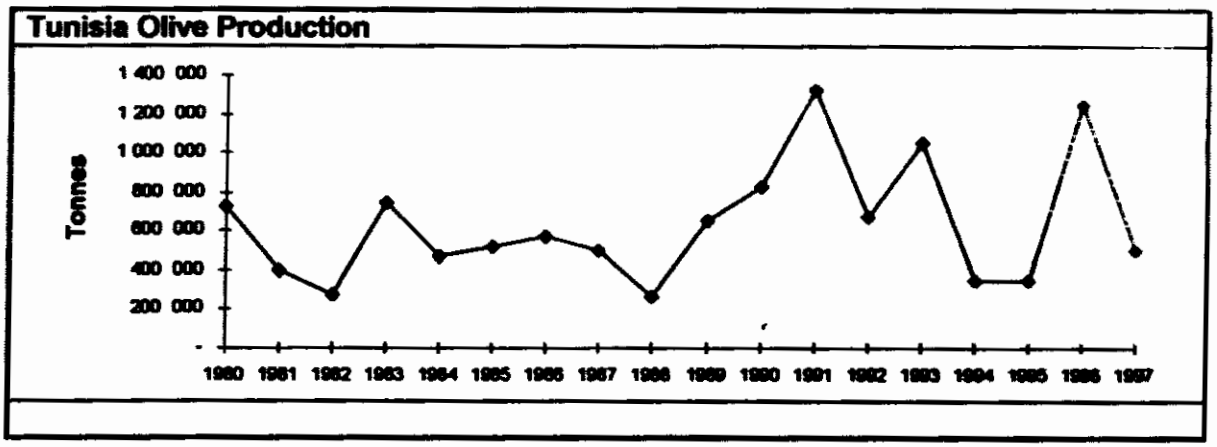
The government has actively promoted the industry. For example, it has established a program encouraging the development of various olive growing areas, mainly in Akhisar and Aydin. It has also applied a minimum export price for black and green olives, to prevent the export of unprocessed table olives and thus retain value-adding activities in the country. Another important development is the growth of a strong nursery sector that produces 3.5 million trees per year. The government has also established olive growing areas to demonstrate increased efficiencies through proper maintenance of groves resulting in increased olive yield. Courses and information programs are being conducted to educate growers on pruning techniques, the latest available technology and production techniques, and to provide products for pest and disease control.

Consumption of table olives has also increased from 90 000 tonnes in 1992-93 to 160 000 tonnes in 1996-97. During the 1996-97 crop year Turkey was the major consumer of black olives, accounting for 30 per cent of total world consumption (IOOC 1997b).

Tunisia

Olive Production

Tunisia is one of the major olive-producing countries



Olive production has fluctuated over the years due to weather conditions, the alternate bearing nature of the olive tree, and cultivation practices. For example, after a near record production of 1 250 000 tonnes in 1996, Tunisia produced only 500 000 tonnes in 1997. Environmental factors such as limited water resources, deforestation, overgrazing, soil erosion and desertification, and the fact that most of the olive groves are in dryland situations, accentuate the effect. Table olive production experienced a similar pattern where: 9 000 tonnes in 1995-96 and 15 000 tonnes in 1996-97

The production of olives is the main activity of the 87 880 agricultural holdings in the country, employing almost 1 million people. Most of the groves are located in the centre of Tunisia, which has 37 per cent of all holdings.

There are approximately 57 million olive trees planted on an area of 1.5 million hectares Seventy-four per cent of trees are of bearing age, 17.5 per cent are young groves and the balance are described as old groves. There are also about 17 000 hectares recently planted with 2 million trees for table olive production. Approximately 60 per cent of these trees are not yet bearing and 28 per cent are on irrigated land. The two most popular olive varieties planted are Chimlali and Chetoiu.

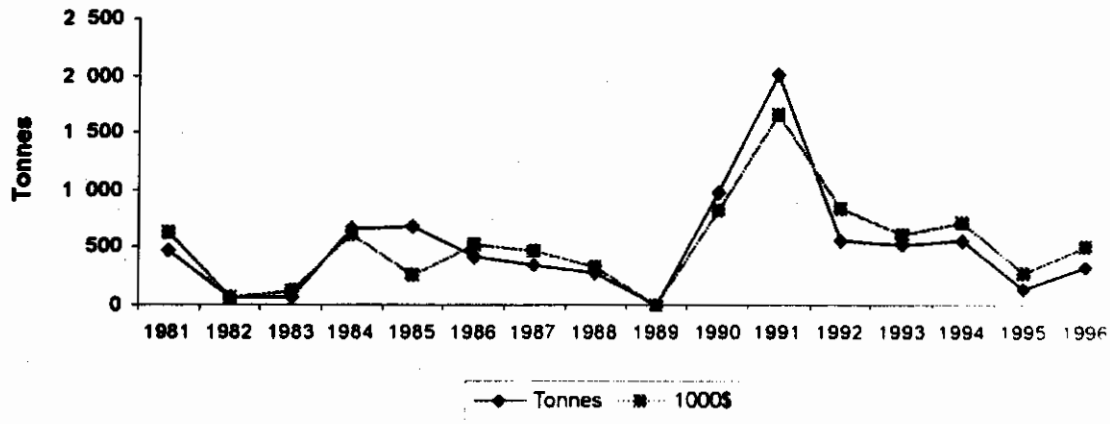
196

Productivity is relatively low due to the unsuitability of land used for production and the poor management practices employed (DGPA/ONH 1996). Holdings are getting smaller and production costs, mainly labour, are increasing. Producers tend to use traditional harvesting and production techniques, being slow to embrace modern practices

Olive Trade

Olives are Tunisia's main agricultural export, accounting for 5.5 per cent of total exports (47 per cent of agricultural exports). They are the country's fifth most important source of foreign earnings. In 1996 Tunisia exported 337 tonnes (US$0.5 million) of olives.

Tunisia Exports of Table Olives



Tunisia recently gained 'favoured country status' from the EU, which entitles it to duty free access to European markets. Tunisia has a fixed import quota into the EU of 46 000 tonnes per year (Polidori, Rocchi and Stefani 1997). The *Office National de l'Huile* (ONH) has offices in France and Italy, its main objective being to promote Tunisian olive in the European markets and to promote technical and scientific collaboration between EU producers and Tunisian producers. Traditionally, olive has been bought by Italy and re-processed for sale. Lately, Tunisia has been looking for new markets outside the Mediterranean region. The government has adopted a range of export-oriented strategies. The objective is to produce 250 000 tonnes of olive by the year 2010, of which 50 per cent will be for Australian consumption and 50 per cent for export.

The Industry

There are 87 880 olive holdings and 1 400 operating olive processing plants in Tunisia. Approximately 27 per cent of the processing plants are super-presses, 27 per cent continuous process facilities and 7.5 per cent combined systems. Traditional plants account for only 39 per cent of the processing operations. There are 13 refineries and 10 packing plants (DGPA/ONH 1996).

The government recently designed a series of schemes to restructure and modernise olive production and improve quality. For example, it has developed programs to improve quality control standards in accordance with IOOC practices, and to modernise the existing refineries and mills. It has fostered the development of plants in areas of limited processing capability and has introduced subsidies for restructuring olive groves Furthermore, olive production has received substantial financial assistance from the World Food Program and the government (ibid.).

Up to 1994 the ONH was the only organisation involved in the collection and marketing of olive. Although the government has permitted some competition in the industry, the ONH is the principal channel for Tunisia's olive exports. It is responsible for setting quality standards, promoting grove protection, encouraging improved cultivation practices and representing the industry.

There are about 19 cooperatives or associations involved in processing and selling olive. There are only about 50 private exporters, who work in close collaboration with the ONH. There are no established producer representative organisations in the industry

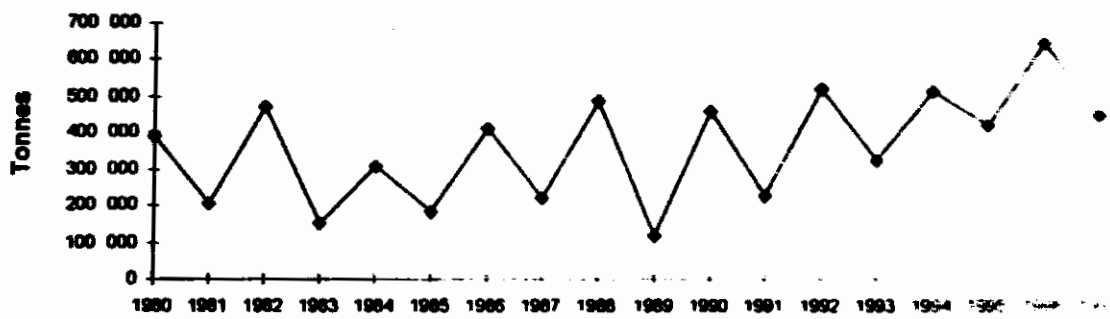
Local consumption to 1993 was subject to consumption restrictions whereby a family was allocated a maximum quota. With the liberalisation of the industry, the quota no longer applies. Despite these changes, less than 28 per cent of Tunisia's production is consumed locally as consumption has slowly decreased during the past 20 years

Syria

Olive Production

Syria is the second largest olive producer in the Arab world after Egypt. It has 57 million trees, of which only 30 million are productive. The groves occupy 405 000 hectares of mainly non-irrigated land. Production of olives has fluctuated over the years. During the 1996-97 crop year Syria produced 85 000 tonnes of table olives. Syria has the highest per capita consumption of table olives in the world (5 kg).

Syria Olive Production, 1980-1997



Trade

Traditionally most of Syria's olive products are consumed in the local market. In 1996-97 only 10 000 tonnes of olive less than 10 per cent of production was exported. Almost all Syria's table olive production is for local consumption; small quantities are exported to Germany and the United Kingdom. Syria imports minimal quantities of table olives.

Recent Developments

The government's objective is to increase production of raw olives to 680 000 tonnes by the year 2005. This would be achieved through the development of nurseries for plant propagation, provision of machinery for improved cultural operations, and implementation of plant protection schemes to control pests and diseases. The government has constructed two main dams to boost agricultural production, reducing

crop dependence on rainfall. It aims to have 63 million olive trees planted by the year 2005.

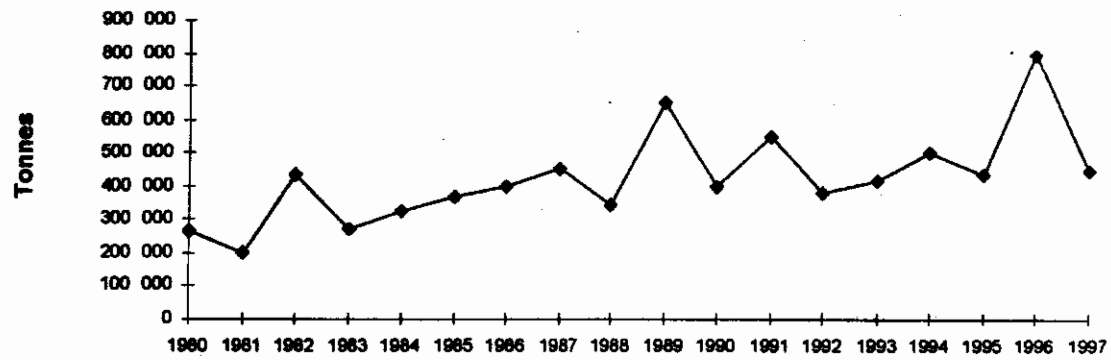
Morocco

Olive Production

In 1995-96, Morocco had an estimated 45 million olive trees, of which 11 per cent were of non-bearing age. More than 95 per cent of trees are of dual-purpose varieties and further plantings are planned.

The two main olive regions are located in Fez (centre) and Marrakesh (south), each producing about a quarter of the country's olives. Average olive yield is only 1.67 tonnes/ha. Most of Morocco's olive production is from non-irrigated land, and rainfall variation cause production variations from one year to the next. For example, production fell in 1995 when Morocco experienced one of its worst droughts in 30 years; the following year, there was a record harvest of approximately 800 000 tonnes. In 1997 production again fell to 1995 levels. In spite of these weather related factors average production has increased during the past decade, mainly due to Government's support to modernise and develop the olive industry. Table olive production increased: from 80 000 tonnes in 1992-93 to 100 000 tonnes in 1996-97.

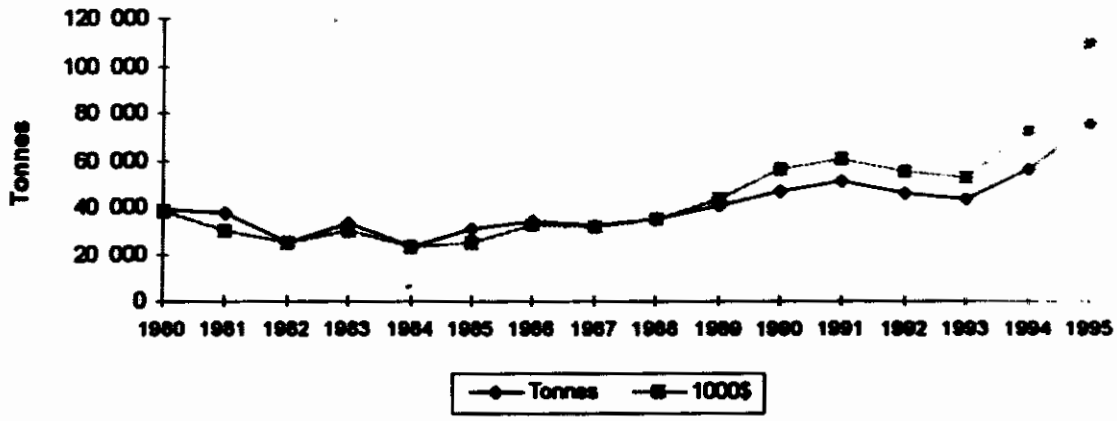
Morocco Olive Production, 1980-1997



Trade

Most olive is consumed Australianally; exports occur sporadically following high production years. The main market is Italy, and to a lesser extent Spain and France. A characteristic of olive exports is that they tend to fluctuate depending on the availability of supply and demand on international markets. Morocco's strength in the olive trade lies with table olives. It exports approximately half of its table olive production and is one of the world's largest exporters of table olives, particularly of black olives. Its main markets are France, Italy, Spain and Belgium.

Morocco Table Olive Exports



Recent Developments

The government has established a series of programs to assist the development of the olive industry. They include subsidies for pest control, the free distribution of olive seedlings, and the provision of technical information and training in olive production At the beginning of the 1990s, more than 500 000 olive trees were distributed As a consequence of these olive plantings, table olive production increased from 70 000 tonnes in 1986-87 to 100 000 tonnes in 1996-97. Exports of table olives have also risen significantly.

Local consumption of table olives increased: from 19 500 tonnes in 1986-87 to 29 000 tonnes in 1996-97.

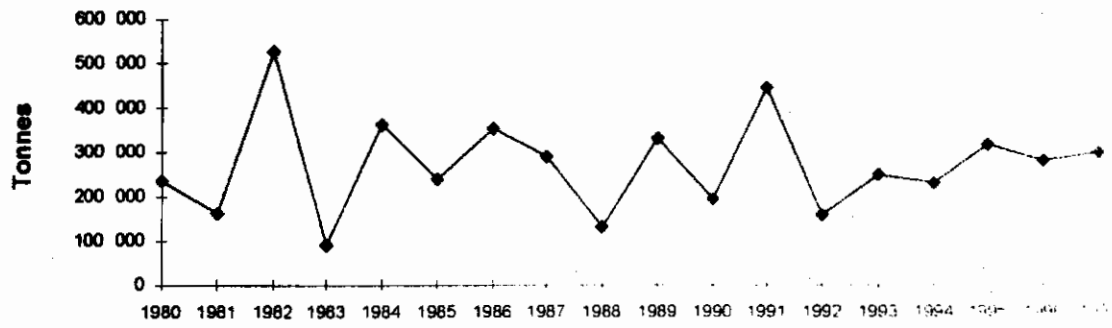
Morocco is likely to continue to consume almost all its production of olive, exporting only when there is a production surplus. However, it is likely that to become a significant exporter of table olives.

Portugal

Olive Production

Portugal is the fourth largest European producer of olive products. There has however been a marked decrease in olive production since the beginning of the 1980s, when output reached more than 500 000 tonnes. In 1997, production amounted to only 300 000 tonnes

Portugal Olive Production, 1980-1997



According to EU estimates, in 1996 Portugal had 38 million olive trees cultivated on an area of 319 790 hectares (EC 1998). There are around 1.1 million trees of non-bearing age and it is planned to plant a further 375 000 trees in the near future.

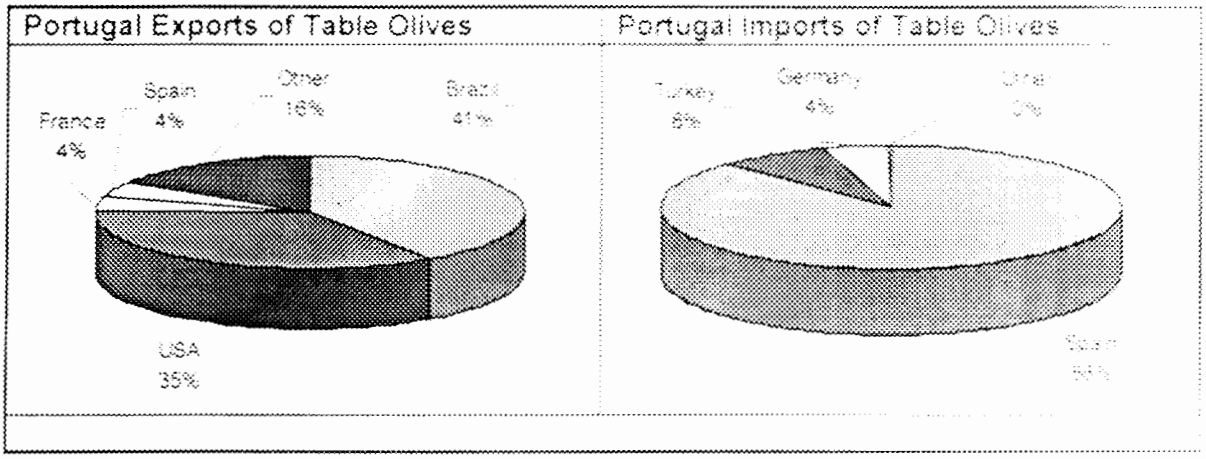
The major areas of production are Alentejo (43%), Tras-os-Montes (20%) and Beire Interior (18%). The variety 'Galega', accounts for 80 per cent of the total olive groves. Olive production in Portugal is characterised by traditional family-owned holdings with an average area of less than 2 hectares, with the exception of Alentejo were the average area is 5.4 hectares. There are 80 to 100 trees per hectare (Castro et al. 1997). Less than 10 per cent of area harvested is devoted to table olives.

On average, EU yields for table olive production are 1.218 tonnes/ha and 2.339 tonnes/ha for production (EC 1998). Portuguese olive yields for table olives are 0.995 tonnes/ha, and 0.603 tonnes/ha for olive, well below the European averages (EC 1998)

Olive Trade

Portugal exports about 30 per cent of its total production. Exports of olive products represent not only economic value but also have a traditional significance, as they are mostly exported to countries with strong cultural and historic links to Portugal. In 1996 most went to Brazil (64%), Spain (12%) and Portuguese-speaking African countries.

In 1996, Portugal exported 9 000 tonnes of table olives, mainly to Brazil (41%) and the United States (35%). Portugal also imported almost 7 000 tonnes, mainly from Spain (88%).



Recent Developments

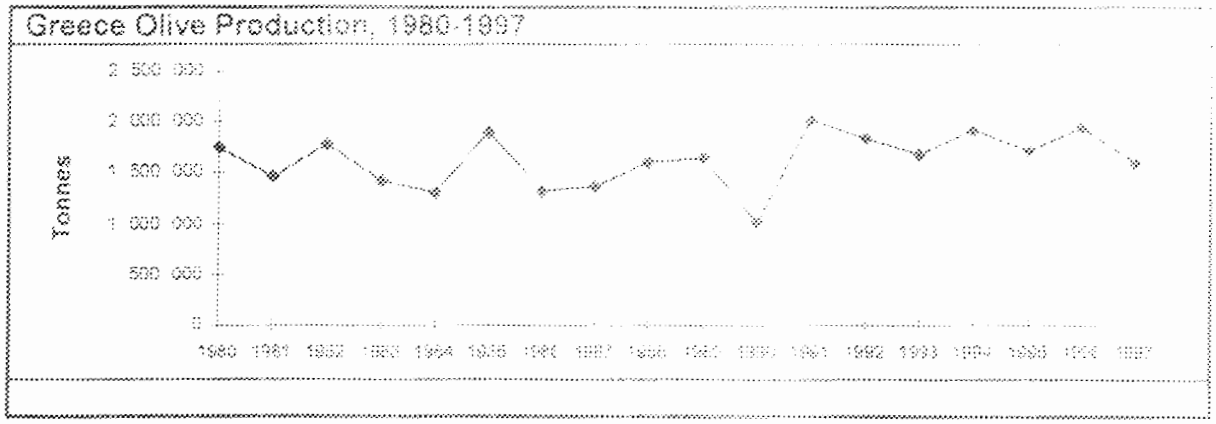
Due to the socio-economic and cultural importance of the olive industry, the government has designated the olive industry as a priority and has drawn up the Plano Nacional para a *Denimizacao da Fileira Oleica* (National Plan for the Development of the Olive Industry). The goals of this plan are to increase the productivity of the industry, establish environmentally sound practices and improve the quality. It is expected that approximately 20 per cent of the processing plants that currently use traditional methods will be modernised. The major production area of Alentejo has invested in the modernisation of olive groves and processing plants.

More than 15 000 hectares of intensive olive plantations were established during the period 1987-1996 in an attempt to check the downward trend in Portuguese olive production. Quality assurance programs were also established for the olive (Castro).

The Portuguese Department of Agriculture has expressed concern at the proposed modifications to the Common Market Organisation (CMO) subsidies scheme. It is believed that the changes will promote unemployment, may induce abandonment of existing groves and may indirectly cause soil erosion.

Greece
Olive Production

In 1996 there were approximately 689 000 hectares under olive groves (EC, 1996), the majority being small, family-owned enterprises. In 1993 there were just under 1[illegible] million olive trees (National Statistics Service of Greece, 1996). In 1[illegible] produced 1 600 000 tonnes of olives, of which more than 95 per cent was destined to olive production.

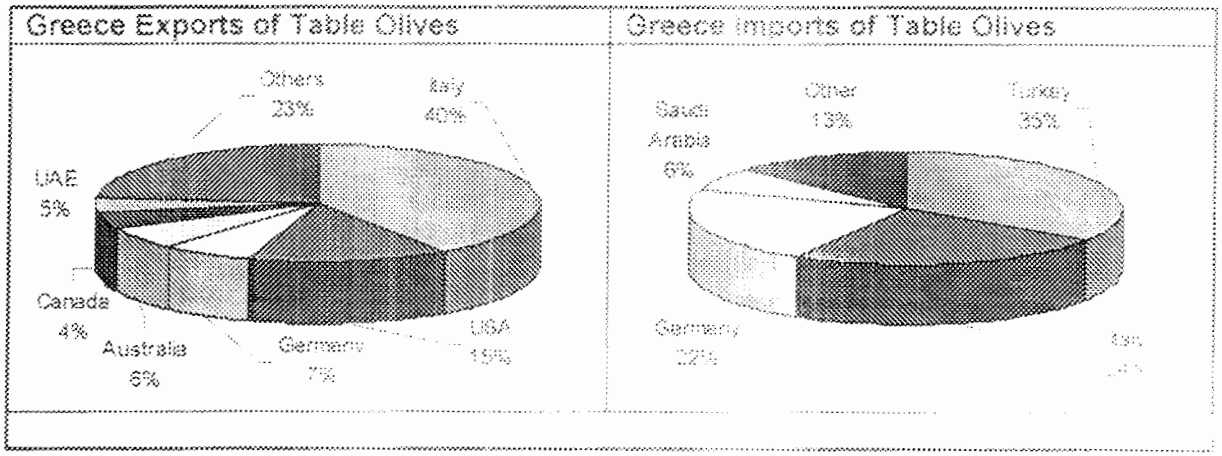


Yields obtained for table olive production are about 0.456 tonnes/ha, well below EU standards, but the average yield of 2 948 tonnes of olives per hectare for the production of olive (EC 1998) is the highest in the EU.

Olive farming is considered so important in Greece that more than half of farms are involved in the cultivation of olive treas. Central Greece and Evia are the major centres for table olives.

Trade

Greece is big net exporter of table olives, exporting more than 56 000 tonnes and importing less than 500 tonnes in 1996. The main markets for Greek table olives are Italy (40%), the United States (15%) and to a lesser extent Germany, Australia, the United Arab Emirates (U.A.E.) and Canada. Imported table olives are sourced from mainly from Turkey (35%) and Italy (24%).



The Industry

The Hellenic Foreign Trade Board, a quasi-government organisation, is responsible for the marketing and promotion of olive products. It has a program that focuses on packaging and promotion, targeting the United States, Australian and United Kingdom markets. Its objective is to increase market share in these countries (USDS 1997).

Developments

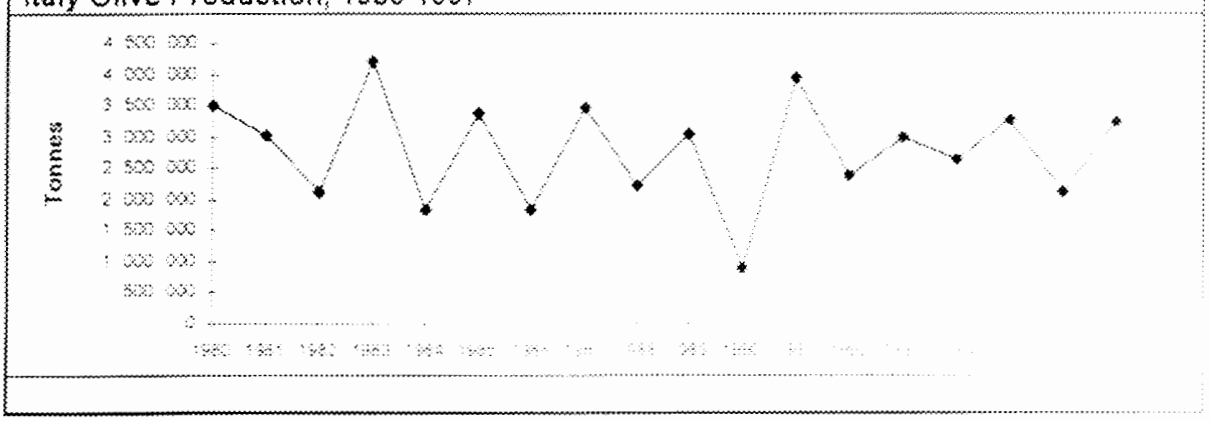
Greek producers believe that the proposed CMO changes and the application of subsidies on a per-tree basis, will mean a considerable loss to Greek producers as their trees are more productive than Italian and Spanish trees. They also claim that Spanish and Italian producers have embarked in a 'race' by planting millions of trees, sometimes in areas unsuitable for olive growing. Greek authorities fear that producers may only consider planting new trees, without taking care of established groves or caring for quality (Maraveyas and Mermigas).

Italy

Olive Production

Italy is a leading olive producer and in 1995 had 1 119 255 hectares dedicated to olive cultivation. The main producing regions are Puglia, Calabria, Sicily and Campania. Production of raw olives in 1997 was expected to be 3 255 800 tonnes.

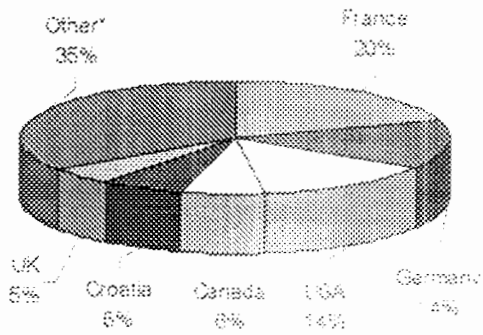
Italy Olive Production, 1980-1997



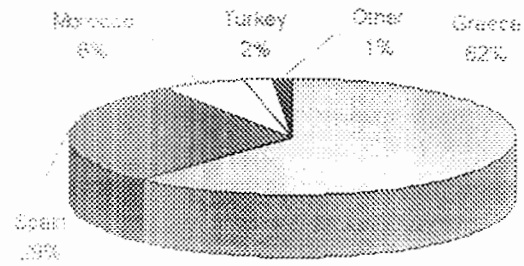
Trade

Italy is a net importer of table olives, importing close to 61 000 tonnes and exporting only 2 700 tonnes in 1996. In that year France (20%), Germany (14%) and the United States (14%) were the main markets for Italian table olives. Greece (62%) and Spain (29%) were the main suppliers.

Italy Exports of Table Olives



Italy Imports of Table Olives

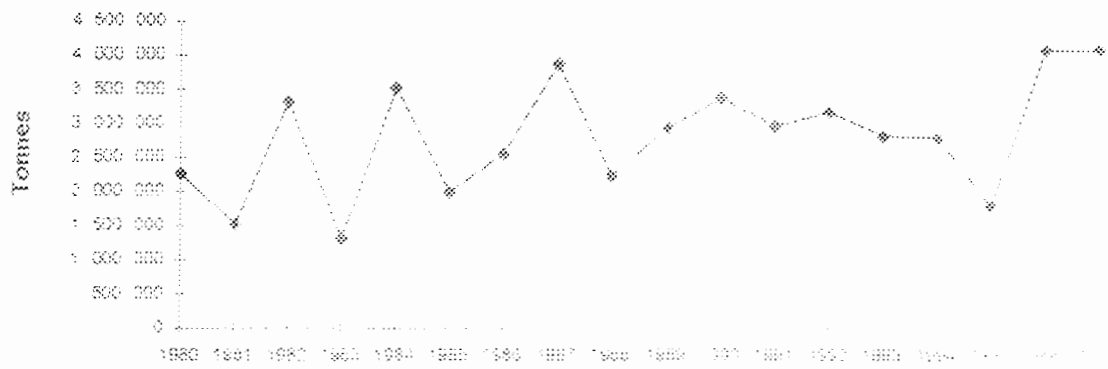


Spain

Olive Production

According to recent estimates, Spain has at least 180 million trees planted on 2 250 000 hectares. In 1997 Spain produced a record harvest of 4 981 500 tonnes of olives. Table olive production for the crop year 1996-97 reached a record level of more than 244 000 tonnes.

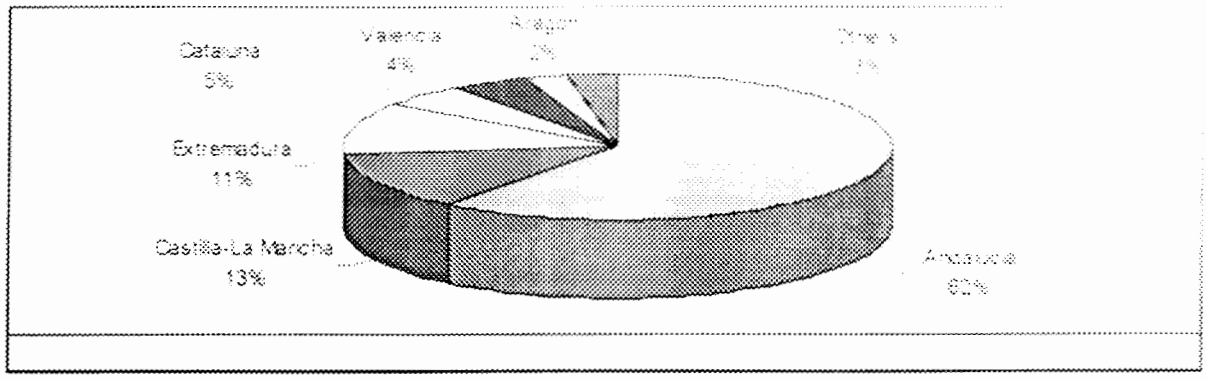
Spain Olive Production



There is a disagreement on the number of trees planted. The European Commission figure is 180 million, while the Spanish Ministry of Agriculture indicates that there are 215 million and the Spanish olive sector has estimated that there are as many as 250 million. If proposed changes to the CMO are accepted, such variation in the estimates may cause disharmony among the interested stakeholders.

In the south of the country is the centre of Spanish olive production, with 60 per cent of groves and accounting for 80 per cent of total Spanish olive production. Within Andalucía, the provinces of Jaén and Córdoba alone account for 40 per cent and 20 per cent respectively of Spain's production. Other important regions are Castilla-La Mancha, Extremadura and Cataluña (Tardaquila).

Spain - Area Planted

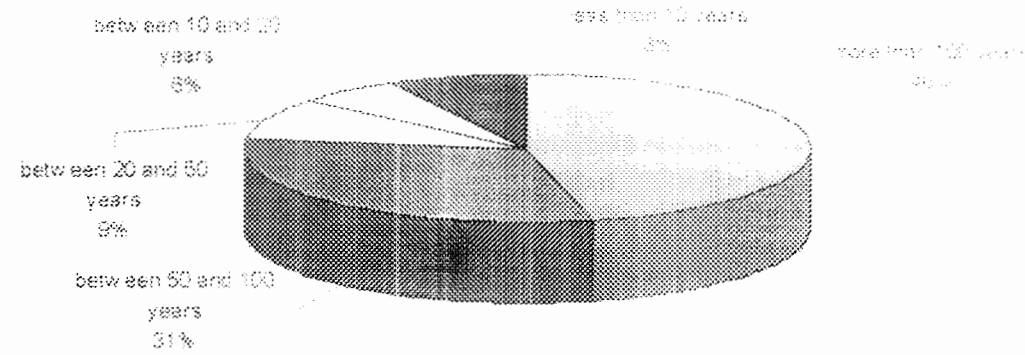


The importance of the olive sector in Spain is such that around 300 towns rely principally on olive production, the industry providing approximately 46 million days of work (Lpez 1997). In Andalucya olive production represents 30 per cent of total agricultural output and in Jaén it represents 80 per cent. In some Andalucian cities, particularly Jaén, the economy relies mainly on olive and olive production. This intense regional specialisation in olive production helps explain the demonstrations against changes to the CAP (Castillo-Quero).

Crop production in Spain is fragmented and characterised by the existence of a considerable number of small to medium-size enterprises and by [illegible]. Approximately 90 per cent of all olive groves are family holdings of less than [illegible] the average size being only 3.8 hectares (Castillo-Quero 1997). Intensive [illegible] comprise about 2.5 to 3 per cent of total groves. Only 10 per cent of existing olive groves are on irrigated land. Approximately 46 per cent of the Spanish olive groves are more than 100 years of age.

The Spanish Olive Industry (hectares)			
Condition	For Olive Oil	For Table Olives	Total
Producing	1 966 186	128 240	2 094 426
No yet producing	81 160	1 747	82 907
Total	*2 047 346*	*129 987*	*2 177 333*
Non-irrigated	1 917 147	109 459	2 026 606
Irrigated	130 199	20 528	150 727
Source: MAPA 1996			

Spain - Age of Olive Groves



Olive growing in Spain has changed significantly in the past three decades. In 1962, 2.42 million hectares were dedicated to olive growing; in 1985, the area had declined to 2.08 million hectares and in 1996 it had risen again to 2.17 million hectares.

The decline in the area planted during the 1970s and 1980s can be attributed to the policies of ordering and reconversion aimed at farm improvement, which is some cases led to the clearance of old olive groves, particularly in Andalucía and Castilla-La Mancha. During the 1990s new groves have been established on good quality irrigated land, resulting in increases in efficiency and, consequently, in production (Castillo-Ocaña 1997). According to the latest figures, during the 1990s around 173 000 hectares have been planted, mainly in the Andalucian region.

Spain - New Areas Planted, 1990-1996

Region	Area (ha)	%
Andalucy	128 113	74.0
Castilla-La Mancha	24 857	14.4
Extremadura	9 678	5.6
Valenciana	6 474	3.7
Aragn	1 599	0.9
Regin de Murcia	1 151	0.7
Navarra	608	0.3
Madrid	242	0.1
Baleares	70	0.04
Total	173 095	100.0

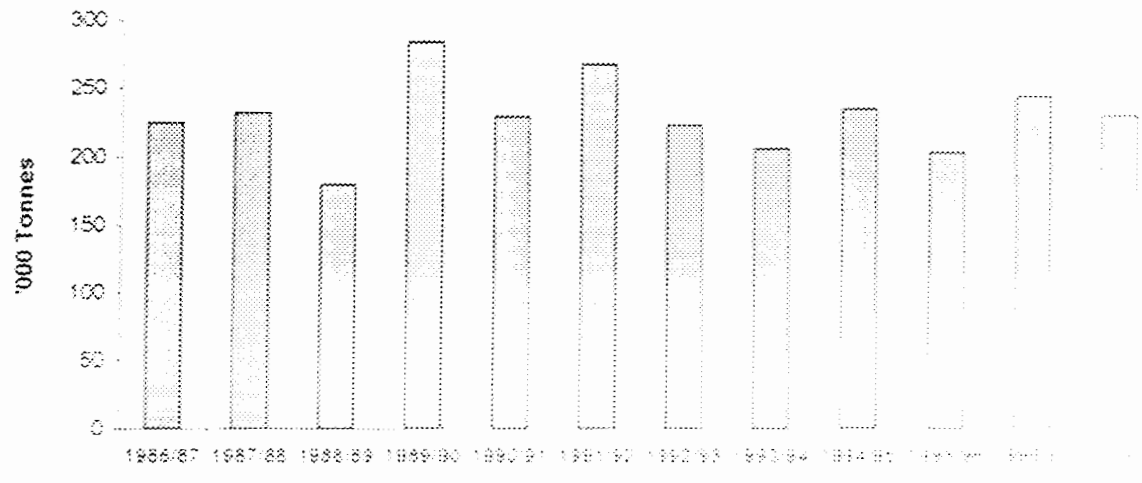
Source: Lopez-Villalta 1997

According to official figures, the tree density in olive groves is an average of 99 trees/hectare. Navarra (150), La Rioja (150), Basque country (150) and Andalucía (105) have the highest density levels. There are also approximately 100 000 hectares with more than 200 trees/ha (Lopez-Villalta 1997). Although olives are planted mainly in non-irrigated areas, the number of irrigated groves has increased from 100 000 in 1985 to 150 000 in 1994, and is likely to continue to rise.

Number of Trees and Tree Density of Spanish Olive Groves		
Province	No. of trees (million)	Density
Andalucía	138.7	[illegible]
Castilla-La Mancha	26.6	[illegible]
Extremadura	23.6	[illegible]
Cataluña	10.6	[illegible]
Valencia	7.3	[illegible]
Aragón	3.6	[illegible]
Madrid	1.9	[illegible]
Murcia	1.1	[illegible]
Baleares	0.7	[illegible]
Castilla y Leon	0.6	[illegible]
La Rioja	0.3	[illegible]
Navarra	0.1	[illegible]
The Basque Country	0.01	[illegible]
Total	215.31	[illegible]
Source: MAPA 1996		

Table olive production has been relative stable at around 230 000 tonnes per year.

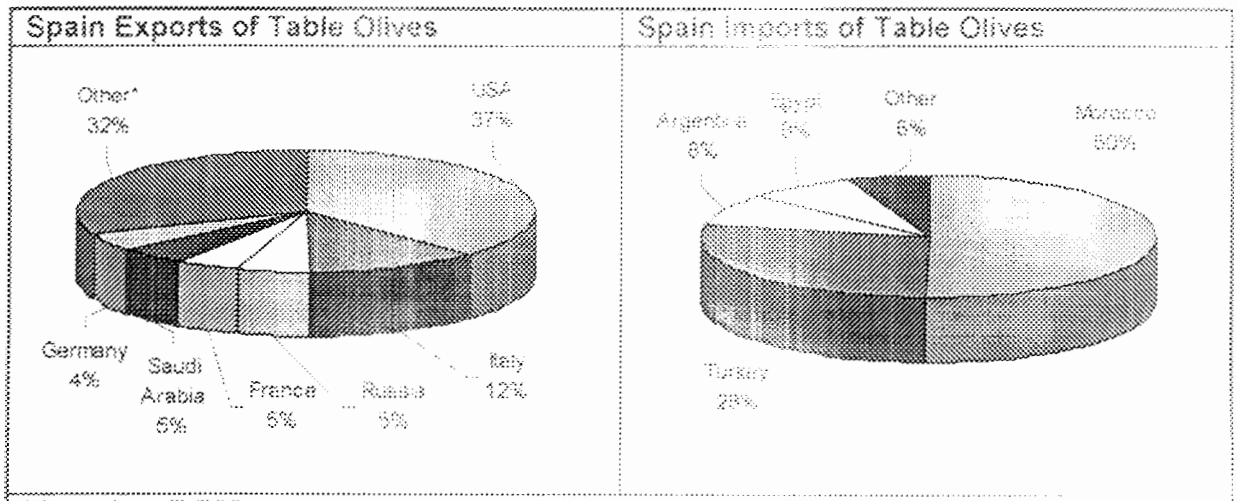
Spanish Production of Table Olives



Source: IOOC 1996a, 1996b, 1997c, 1997d

Trade

In 1996-97, approximately 130 000 tonnes of table olives were exported, the main markets being the United States (37%) and Italy (12%). Less that 1 900 tonnes of table olives were imported, the major suppliers being Morocco (50%), Turkey (26%) and Argentina. (8%).



* less than 7 500 tonnes

The Industry

Spain is the leader in the production and export of table olives, particularly of green table olives. The sector provides more than 10 000 jobs, contributing 27 per cent of total employment in the canned and prepared food products industry (de Mora). Per capita consumption of table olives has fallen from 3.04 kg in 1993 to 2.77 kg in 1997, a phenomenon attributed to higher prices.

There are also two non-profit associations of olive exporters, ASEMESA and ASOLIVA. The Table Olive Exporters' Association, ASEMESA, is a non-profit organisation established to represent the interest of the table olive sector and implements coordinated growing, processing and marketing policies (de Mora 1995). It represents firms responsible for 80 per cent of Spanish exported table olives.

Recent Developments

Multinational companies have acquired a significant share of the Spanish market. Aceites Espables (Carbonell and Elosua) controls 28 per cent of the Australian market; Feruzzi (Salgado and Koipe) has 14 per cent; Unilever (Lunce, La Masia, Lindolive) 9.5 per cent and Uteco-Jaén 7.9 per cent (Parras-Rosa 1997).

Concluding Remarks

This analysis has alluded to the importance of olive production in the countries examined. In many cases, the industry is experiencing significant changes such as expansion, modernisation of harvesting and processing techniques, rationalisation, and improvement in quality standards. These changes are likely have a substantial impact on productivity and levels of production. The IOOC and the European Commission have recognised this and have initiated campaigns to increase consumption. If consumption does not keep pace with production, oversupply in the world market for olive products will occur, resulting in depressed prices worldwide.

Egypt Export Situation and Opportunities

Egypt has shipped only very limited quantities of olives to the U S market over the five year period covering calendar years 1995 through 1999. The largest shipments over this period occurred in CY 1996, when 17 MT were exported at a CIF value of $37 000 Shipments amounting to only a few thousand Dollars took place in calendar years 1995 1997 and 1999.

Does Egypt have the capability and capacity to be a player in the US olive market?

For the purposes of this market opportunity report, we are assuming that the olives shipped from Egypt under the classification 2001.90.1010 are not capers (capers are not grown in Egypt) but whole olives packed in bulk containers weighing more than 3.4 kg. One has no way of knowing if these are green or black in color.

Under the 0711 classification, we assume that the reported exports are "not-pitted, green olives" in bulk packaging of more than 8 kg. We are unclear as to whether these are raw or ready for consumption.

If one were to interpolate the CAPMAS data, perhaps one could conclude that the 2001.90.10.10 classifications are "not-pitted olives", green or black. The 2001 90 10 20 classification is for "pitted olives", green or black. Both classifications would be in packaging between 3.4 kg and 8 kg.

Perhaps the 0711.20.00.10 olives are green olives with pits shipped in packages weighing more than 8 kg. Perhaps the 0711.20.00.90 are green olives in more than 8 kg packages but converted in some way – pitted, sliced, diced, stuffed, etc. It is apparent that for statistical gathering purposes, customs has contracted the HTS codes to a relatively few categories, mixing colors and/or converted (added value) product. At the time of this writing, ALEB could not gain more information from olive shippers that would clarify this issue.

What is clear from these two sets of figures is that the Egyptian export market for olives is growing. Classification 2001901010 "Olives prepared or preserved by vinegar or other" in 1999 accounted for 86% of the total by volume and 75% by value. This classification grew by 14% in value and 15% by volume over 1998.

But it is unsettling to see the volatility in the customer base. Egypt exported olives to thirteen countries in 1998. They exported to nine countries in 1999. Of the nine countries in the last year, four were new, representing a "swing" of eight markets, or almost two thirds of the 1998 market base. Further, an unhealthy dependency existed in 1999 on two countries: Israel accounted for 71% of the total volume and India accounted for 75% of the total value. The dependency is serious when one looks at the prices Israel paid 19% of the average price and 16% of the weighted average price for this predominant classification. India paid 388% of the average price and 332% of the weighted average price. Yet India absorbed only 6% of the volume.

It is clear that Egyptian olive producers are seriously losing price negotiations in Palestine and Israel, only marginally improving in francophone Europe, holding the line in the Gulf markets and competing well on price in the United States, but with low volumes

One area where Egypt is faring well is with pitted green olives sold to Spain at an average price of $1.00 kg. But these same olives are sold by Spain, depending on HTS code, to the United States at considerably higher price points. The value of knowing ones' market and building customer relations is the moral of the above scenarios.

Following tables show all Egyptian shipments of olives, by USHTS product categories, to the U.S.A. market over the CY 1995 through 1999 period.

Summary and Recommendations

The Spanish are by far the dominant player on the U.S. import market for olives, holding an amazing market share of 73.4 percent based on CIF value In addition to this dominant market share position, it appears from analyzing U.S. import statistics that Spain also appears to command premium prices in some product categories over olive products from their two distant competitor countries, Greece and Morocco

The overall U.S. import market for olives appears to be growing, both in terms of value and volume. The total volume of olives imported has increased 20.4 percent over the five-year period from 1995 to 1999. U.S. imports of olives from these top three supplying countries all registered significant increases, in terms of CIF values, during CY 1999. Spain's trade led the pack with a 15 percent increase, followed by Morocco (the 3rd leading supplier), which registered a 12.1 percent increase, with Greece also posting a healthy 8.8 percent gain in exports.

It is clear that Egypt has the capacity to produce olives in sufficient quantities to at least attempt to gain entry in the US market. Only a 1% market share of the US imports represents a 943MT export potential, but represents less than one half of 1% of Egyptian production. At an average price of $1.75/kg, a 1% market share would represent olive export sales from Egypt in excess of $1,650,000. During the study tour to the Food Marketing Institute exhibition in Chicago in May 2000, there was substantial interest voiced in Egyptian olives by potential buyers in the US. It became apparent that an Egyptian producer of olives sold to a Spanish company, who in turn sold to a particular buyer in the States. If Egypt were to target 1% of the US import market by bypassing Spanish resellers, this would only represent a 1.5% portion of Spain's exports – not a large enough erosion of market share to instigate retaliatory or predatory measures by Spanish suppliers. Even if Egypt were to inadvertently take Greek or Moroccan market share, the "hit", if singly apportioned, would represent 8.5% of a single country's market share. Divided proportionately, the erosion in Greek or Moroccan market share would be slightly more than 4%. In any scenario, this would certainly be attainable in the first year.

Based on this preliminary analysis of the U.S. import trade in olives, Egyptian olive exporters will have to aggressively market their products on the U.S. market, and will most probably need to offer delivered export price levels that are highly competitive with those from Spain, Greece, and Morocco. Since Egypt is not currently a player on the U.S. market for olives, exporters will most likely need to be in a position to offer landed export prices at levels below those of their competitor companies in Spain, Greece and Morocco, in order to develop any significant new long-term export business.

212

2

Technology of Production, Production Plan, and Associated Production Costs

Technology of Production

Controlled fermentation

Bio Lacto / Deep Root fermented vegetables... What is it?

- Lactic fermentation gives vegetables a slightly crunchy texture, an attractive color, and a mild tartness, which stimulates the appetite.
- Fermentation uses only the minimum amount of salt required for lactic transformation.
- No vinegar (acetic acid) added.
- Pickled products are rich in desirable lactic bacteria and enzymes.
- Unlike the processes of canning and freezing, preserving fresh vegetables through lactic fermentation involves no cooking or pre-heating.
- Fermented vegetables contain high amounts of vitamins and minerals.

Food processing is probably the most important source of income and employment in Africa, Asia and Latin America. The Food and Agriculture Organization of the United Nations has stated that value added through marketing and processing raw products can be much greater than the value of primary production (Anon, 1995). For instance in sub-Saharan Africa more than 60% of the workforce is employed in the small-scale food-processing sector, and between one third and two thirds of value added manufacturing is based on agricultural raw materials (World Bank, 1989), (Conroy et al, 1995). This is particularly important, as agriculture and the formal sector are unable to absorb the growing labor force in many countries.

The production of fermented raw material and vegetable products provides income and employment to millions of people around the world. Fermented foods are popular throughout the world and the production of fermented food products is important in many countries in providing income and employment.

Advantages of Fermented Vegetables

Vitamins

Fermentation processes can result in increased levels of vitamins in the final product. *Saccharomyces cerevisiae* is able to concentrate large quantities of thiamin, nicotinic acid and biotin and thus form enriched products.

Digestibility

Microorganisms contain certain enzymes, such as cellulases, which are incapable of being synthesized by humans. Microbial cellulases hydrolyse cellulose into sugars, which are then readily digestible by humans. Similarly pectinases soften the texture of foods and liberates sugars for digestion. Fermented foods are often more easily digestible than unfermented foods (Kovac, 1997), (Parades-Lopez, 1992).

Lactic acid fermented weaning foods are produced in developing countries, both to improve the safety of the food and to improve its digestibility. Starchy porridges are commonly fed to weaning infants in developing countries. The consistency of these gruels, combined with the small capacity of the infants stomach, means that it is physically impossible for the child to consume adequate energy to meet its high demands. By acidifying the porridge through lactic acid fermentation, starch is hydrolyzed into shorter chains of glucose and dextrose, which reduce the viscosity of the porridge and increase its energy density. Thus the child is more able to meet its energy requirements.

Medicinal benefits

There are many traditional beliefs about the medicinal properties of fermented food products. There is a sound scientific basis to these assertions:

- The lowering of the pH inhibits the growth of food spoiling or poisoning bacteria and destroys certain pathogens.
- Certain lactic acid bacteria (e.g. *Lactobacillus acidophilus*) and moulds have been found to produce antibiotics and bacteriocins.
- The beneficial health effects of lactic acid bacteria on the intestinal flora are well documented.
- Substances in fermented foods have been found to have a protective effect against the development of cancer.

BASIC PRINCIPLES OF FERMENTATION

The diversity of fermented foods

Some of the more obvious fermented raw material and vegetable products are the alcoholic beverages - beers and wines. However, several more fermented raw material and vegetable products arise from lactic acid fermentation and are extremely important in meeting the nutritional requirements of a large proportion of the world's population.

Organisms responsible for food fermentations

The most common groups of microorganisms involved in food fermentations are bacteria, yeasts, and Moulds

Several bacterial families are present in foods, the majority of which are concerned with food spoilage. As a result, the important role of bacteria in the fermentation of foods is often overlooked. The most important bacteria in desirable food

fermentations are the *lactobacillaceae* which have the ability to produce lactic acid from carbohydrates. Other important bacteria, especially in the fermentation of raw materials and vegetables, are the acetic acid producing *acetobacter* species.

When microorganisms metabolize and grow they release by-products. In food fermentations the by-products play a beneficial role in preserving and changing the texture and flavor of the food substrate. For example, acetic acid is the by-product of the fermentations of some raw materials. This acid not only affects the flavor of the final product, but also more importantly has a preservative effect on the food. For food fermentations, microorganisms are often classified according to these by-products. The fermentation of milk to yoghurt involves a specific group of bacteria called the lactic acid bacteria (*Lactobacillus* species). This is a general name attributed to those bacteria, which produce lactic acid as they grow. Acidic foods are less susceptible to spoilage than neutral or alkaline foods and hence the acid helps to preserve the product. Fermentations also result in a change in texture.

Enzymes

The changes that occur during fermentation of foods are the result of enzymic activity. Enzymes are complex proteins produced by living cells to carry out specific biochemical reactions. They are known as catalysts since their role is to initiate and control reactions, rather than being used in a reaction. Because they are proteinaceous in nature, they are sensitive to fluctuations in temperature, pH, moisture content, ionic strength and concentrations of substrate and inhibitors. Each enzyme has requirements at which it will operate most efficiently. Extremes of temperature and pH will denature the protein and destroy enzyme activity. Because they are so sensitive, enzymic reactions can easily be controlled by slight adjustments to temperature, pH or other reaction conditions. In the food industry, enzymes have several roles - the liquefaction and saccharification of starch, the conversion of sugars and the modification of proteins. Microbial enzymes play a role in the fermentation of raw materials and vegetables.

Nearly all food fermentations are the result of more than one micro-organism, either working together or in a sequence. For example, vinegar production is a joint effort between yeast and acetic acid forming bacteria. The yeast convert sugars to alcohol, which is the substrate required by the *acetobacter* to produce acetic acid. Bacteria from different species and the various micro-organisms - yeast and moulds -all have their own preferences for growing conditions, which are set within narrow limits. There are very few pure culture fermentations. An organism that initiates fermentation will grow there until it's by-products inhibit further growth and activity. During this initial growth period, other organisms develop which are ready to take over when the conditions become intolerable for the former ones.

In general, growth will be initiated by bacteria, followed by yeasts and then moulds. There are definite reasons for this type of sequence. The smaller micro-organisms are the ones that multiply and take up nutrients from the surrounding area most rapidly. Bacteria are the smallest of micro-organisms, followed by yeasts and moulds. The smaller bacteria, such as *Leuconostoc* and *Streptococcus* grow and ferment more rapidly than their close relations and are therefore often the first species to colonise a substrate (Mountney and Gould, 1988).

Microorganisms commonly found in fermenting raw material and vegetables

Organism	Reactions
Acetobacter genus A. aceti A. pasteurianus A. peroxydans	Oxidise organic compounds (alcohol) to organic acids (acetic acid). Important in vinegar production.
Streptococcaceae Family	
Streptococcus genus S. faecalis S. bovis S. thermophilus	Homofermentative. Most common in dairy fermentations, but S. Faecalis is common in vegetable products. Tolerate salt and can grow in high pH media.
Leuconostoc genus L. mesenteroides L. dextranicum L. paramesenteroides L. oenos	Heterofermentative. Produce lactic acid, plus acetic acid, ethanol and carbon dioxide from glucose. Small bacteria, therefore have an important role in initiating fermentations. L. oenos is often present in wine. It can utilise malic acid and other organic acids.
Pediococcus genus P. cerevisiae P. acidilactici P. pentosaceus	Saprophytic organisms found in fermenting vegetables, mashes, beer and wort. Produce inactive lactic acid.
Lactobacillaceae Family	Metabolise sugars to lactic acid, acetic acid, ethyl alcohol and carbon dioxide.
Lactobacillus genus	The genus is split into two types – homo- and hetero-fermenters. Saprophytic organisms. Produce greater amounts of acid than the cocci
Homofermentative Lactobacillus spp. L. delbrueckii L. leichmannii L. plantarum L. lactis L. acidophilus	Produce only lactic acid. L. plantarum important in raw material and vegetable fermentation. Tolerates high salt concentration.
Heterofermentative Spp. L. brevis L. fermentum L. buchneri	Produce lactic acid (50%) plus acetic acid (25%), ethyl alcohol and carbon dioxide (25%). L. brevis is the most common. Widely distributed in plants and animals. Partially reduces fructose to mannitol.

Desirable fermentation

It is essential with any fermentation to ensure that only the desired bacteria, yeasts or moulds start to multiply and grow on the substrate. This has the effect of suppressing other microorganisms which may be either pathogenic and cause food poisoning or will generally spoil the fermentation process, resulting in an end product which is neither expected nor desired. An everyday example used to illustrate this

point is the differences in spoilage between pasteurized and un-pasteurized milk. Un-pasteurized milk will spoil naturally to produce a sour tasting product, which can be used in baking to improve the texture of certain breads. Pasteurized milk, however, spoils (non-desirable fermentation) to produce an unpleasant product, which has to be disposed of. The reason for this difference is that pasteurization (despite being a very important process to destroy pathogenic micro-organisms) changes the microorganism environment and if pasteurized milk is kept un-refrigerated for some time, undesirable microorganisms start to grow and multiply before the desirable ones. In the case of un-pasteurized milk, the non-pathogenic lactic acid bacteria start to grow and multiply at a greater rate that any pathogenic bacteria. Not only do the larger numbers of lactic acid bacteria compete more successfully for the available nutrients, but as they grow they produce lactic acid which increases the acidity of the substrate and further suppresses the bacteria which cannot tolerate an acid environment.

Most food spoilage organisms cannot survive in either alcoholic or acidic environments. Therefore, the production of both these end products can prevent a food from spoilage and extend the shelf life. Alcoholic and acidic fermentations generally offer cost effective methods of preserving food for people in developing countries, where more sophisticated means of preservation are unaffordable and therefore not an option.

The principles of microbial action are identical both in the use of microorganisms in food preservation, such as through desirable fermentations, and also as agents of destruction via food spoilage. The type of organisms present and the environmental conditions will determine the nature of the reaction and the ultimate products. By manipulating the external reaction conditions, microbial reactions can be controlled to produce desirable results. There are several means of altering the reaction environment to encourage the growth of desirable organisms. These are discussed below.

Manipulation of microbial growth and activity

There are six major factors that influence the growth and activity of microorganisms in foods. These are moisture, oxygen concentration, temperature, nutrients, pH and inhibitors (Mountney and Gould, 1988). The food supply available to the microorganisms depends on the composition of the food on which they grow. All microorganisms differ in their ability to metabolize proteins, carbohydrates and fats. Obviously, by manipulating any of these six factors, the activity of microorganisms within foods can be controlled.

Moisture

Water is essential for the growth and metabolism of all cells. If it is reduced or removed, cellular activity is decreased. For example, the removal of water from cells by drying or the change in state of water (from liquid to solid) affected by freezing, reduces the availability of water to cells (including microbial cells) for metabolic activity. The form in which water exists within the food is important as far as microbial activity is concerned. There are two types of water - free and bound. Bound water is present within the tissue and is vital to all the physiological

processes within the cell. Free water exists in and around the tissues and can be removed from cells without seriously interfering with the vital processes. Free water is essential for the survival and activity of microorganisms. Therefore, by removing free water, the level of microbial activity can be controlled. The amount of water available for microorganisms is referred to as the water activity (a_w). Pure water has a water activity of 1.0. Bacteria require more water than yeasts, which require more water than moulds to carry out their metabolic activities. Almost all-microbial activity is inhibited below a_w of 0.6. Most fungi are inhibited below a_w of 0.7, most yeasts are inhibited below a_w of 0.8 and most bacteria below a_w 0.9. Naturally, there are exceptions to these guidelines and several species of microorganism can exist outside the stated range. See table for further information on water activity and microbial action. Altering the amount of free water available can change the water activity of foods. There are several ways to achieve this – drying to remove water; freezing to change the state of water from liquid to solid; increasing or decreasing the concentration of solutes by adding salt or sugar or other hydrophilic compounds (salt and sugar are the two common additives used for food preservation). Addition of salt or sugar to a food will bind free water and so decrease the a_w. Alternatively, decreasing the concentration will increase the amount of free water and in turn the a_w. Manipulation of the a_w in this manner can be used to encourage the growth of favorable microorganisms and discourage the growth of spoilage ones.

Oxidation-Reduction potential

Oxygen is essential to carry out metabolic activities that support all forms of life. Free atmospheric oxygen is utilized by some groups of microorganisms, while others are able to metabolize the oxygen, which is bound to other compounds such as carbohydrates. This bound oxygen is in a reduced form.

Microorganisms can be broadly classified into two groups - aerobic and anaerobic. Aerobes grow in the presence of atmospheric oxygen while anaerobes grow in the absence of atmospheric oxygen. In the middle of these two extremes are the facultative anaerobes, which can adapt to the prevailing conditions and grow in either the absence or presence of atmospheric oxygen. Microaerophilic organisms grow in the presence of reduced amounts of atmospheric oxygen. Thus, controlling the availability of free oxygen is one means of controlling microbial activity within a food. In aerobic fermentations, the amount of oxygen present is one of the limiting factors. It determines the type and amount of biological product obtained, the amount of substrate consumed and the energy released from the reaction.

Moulds do not grow well in anaerobic conditions; therefore they are not important in terms of food spoilage or beneficial fermentation, in conditions of low oxygen availability.

Temperature

Temperature affects the growth and activity of all living cells. At high temperatures, organisms are destroyed, while at low temperatures, their rate of activity is decreased or suspended. Microorganisms can be classified into three distinct categories according to their temperature preference.

Nutritional requirements

The majority of organisms are dependent on nutrients for both energy and growth. Organisms vary in their specificity towards different substrates and usually only colonies foods, which contain the substrates they require. Sources of energy vary from simple sugars to complex carbohydrates and proteins. The energy requirements of microorganisms are very high. Limiting the amount of substrate available can check their growth.

Hydrogen ion concentration (pH)

The pH of a substrate is a measure of the hydrogen ion concentration. A food with a pH of 4.6 or less is termed a high acid or acid food and will not permit the growth of bacterial spores. Foods with a pH above 4.6. are termed low acid and will not inhibit the growth of bacterial spores. By acidifying foods and achieving a final pH of less than 4.6, most foods are resistant to bacterial spoilage.

The optimum pH for most microorganisms is near the neutral point (pH 7.0). Certain bacteria are acid tolerant and will survive at reduced pH levels. Notable acid-tolerant bacteria include *the Lactobacillus* and *Streptococcus* species, which play a role in the fermentation of dairy and vegetable products. Moulds and yeasts are usually acid tolerant and are therefore associated with spoilage of acidic foods.

Microorganisms vary in their optimal pH requirements for growth. Most bacteria favour conditions with a near neutral pH (7). Yeasts can grow in a pH range of 4 to 4.5 and moulds can grow from pH 2 to 8.5, but flavor an acid pH. The varied pH requirements of different groups of micro-organisms is used to good effect in fermented foods where successions of micro-organisms take over from each other as the pH of the environment changes. For instance, some groups of microorganisms ferment sugars so that the pH becomes too low for the survival of those microbes. The acidophilic microorganisms then take over and continue the reaction. The affinity for different pH can also be used to good effect to occlude spoilage organisms.

Inhibitors

Many chemical compounds can inhibit the growth and activity of microorganisms. They do so by preventing metabolism, denaturation of the protein or by causing physical damage to the cell. The production of substrates as part of the metabolic reaction also acts to inhibit microbial action.

Controlled fermentation

Controlled fermentations are used to produce a range of fermented foods, including sauerkraut, pickles, olives, vinegar, dairy and other products. Controlled fermentation is a form of food preservation since it generally results in a reduction of acidity of the food, thus preventing the growth of spoilage microorganisms. The two most common acids produced are lactic acid and acetic acid, although small amounts of other acids such as propionic, fumaric and malic acid are also formed during fermentation.

It is highly probable that the first controlled food fermentations came into existence through trial and error and a need to preserve foods for consumption later in the season. It is possible that the initial attempts at preservation involved the addition of salt or seawater. During the removal of the salt prior to consumption, the foods would pass through stages favourable to acid fermentation. Although the process worked, it is likely that the causative agents were unknown. Today, there are numerous examples of controlled fermentation for the preservation and processing of foods. However, only a few of these have been studied in any detail - these include sauerkraut, pickles, kimchi, beer, wine and vinegar production. Although the general principles and processes for many of the fermented raw material and vegetable products are the same -relying mainly on lactic acid and acetic acid forming bacteria, yeasts and moulds, the reactions have not been quantified for each product. The reactions are usually very complex and involve a series of micro-organisms, either working together or in succession to achieve the final product.

BACTERIAL FERMENTATIONS

What are bacteria?

Bacteria are "a large group of unicellular or multi-cellular organisms lacking chlorophyll, with a simple nucleus, multiplying rapidly by simple fission, some species developing a highly resistant resting (spore) phase; some species reproduce sexually, and some are motile. In shape they are spherical, rodlike, spiral, or filamentous. They occur in air, water, soil, rotting organic material, animals and plants. Saprophytic forms are more numerous than parasites. A few forms are autotrophic" (Walker, 1988).

There are several bacterial families present in foods, the majority of which are concerned with food spoilage. The important role of bacteria in the fermentation of foods is often overlooked.

Lactic Acid Bacteria

The lactic acid bacteria are a group of Gram-positive bacteria, non-respiring, non-spore forming, cocci or rods, which produce lactic acid as the major end product of the fermentation of carbohydrates. They are the most important bacteria in desirable food fermentations, being responsible for the fermentation of sour dough bread, sorghum beer, all fermented milks, cassava (to produce *gari* and *fufu*) and most "pickled" (fermented) vegetables. Historically, bacteria from the genera *Lactobacillus, Leuconostoc, Pediococcus* and *Streptococcus* are the main species involved. Several more have been identified, but play a minor role in lactic fermentations. .

Lactic acid bacteria carry out their reactions - the conversion of carbohydrate to lactic acid plus carbon dioxide and other organic acids - without the need for oxygen. They are described as microaerophilic as they do not utilise oxygen. Because of this, the changes that they effect do not cause drastic changes in the composition of the food. Some of the family are homofermentative, that is they only produce lactic acid, while others are heterofermentative and produce lactic acid plus other volatile compounds and small amounts of alcohol. *Lactobacillus acidophilus, L. bulgaricus,*

L. plantarum, L. caret, L. pentoaceticus, L brevis and *L. thermophilus* are examples of lactic acid-producing bacteria involved in food fermentations. All species of lactic acid bacteria have their own particular reactions and niches, but overall, *L. plantarum* – a homofermenter -produces high acidity in all vegetable fermentations and plays the major role. All lactic acid producers are non-motile gram positive rods that need complex carbohydrate substrates as a source of energy. The lactic acid they produce is effective in inhibiting the growth of other bacteria that may decompose or spoil the food. Because the whole group are referred to as 'lactic acid bacteria' it might appear that the reactions they carry out are very simple, with the production of one substrate. This is far from the truth. The lactic acid bacteria are a diverse group of organisms with a diverse metabolic capacity. This diversity makes them very adaptable to a range of conditions and is largely responsible for their success in acid food fermentations.

Despite their complexity, the whole basis of lactic acid fermentation centres on the ability of lactic acid bacteria to produce acid, which then inhibits the growth of other non-desirable organisms. All lactic acid producers are micro-aerophilic, that is they require small amounts of oxygen to function. Species of the genera *Streptococcus* and *Leuconostoc* produce the least acid. Next are the heterofermentative species of *Lactobacillus* which produce intermediate amounts of acid, followed by the *Pediococcus* and lastly the homofermenters of the *Lactobacillus* species, which produce the most acid. Homofermenters, convert sugars primarily to lactic acid, while heterofermenters produce about 50% lactic acid plus 25% acetic acid and ethyl alcohol and 25% carbon dioxide. These other compounds are important as they impart particular tastes and aromas to the final product. The heterofermentative lactobacilli produce mannitol and some species also produce dextran.

Leuconostoc mesenteroides is a bacterium associated with the sauerkraut and pickle fermentations. This organism initiates the desirable lactic acid fermentation in these products. It differs from other lactic acid species in that it can tolerate fairly high concentrations of salt and sugar (up to 50% sugar). *L. mesenteroides* initiates growth in vegetables more rapidly over a range of temperatures and salt concentrations than any other lactic acid bacteria. It produces carbon dioxide and acids which rapidly lower the pH and inhibit the development of undesirable micro-organisms. The carbon dioxide produced replaces the oxygen, making the environment anaerobic and suitable for the growth of subsequent species of lactobacillus. Removal of oxygen also helps to preserve the colour of vegetables and stabilises any ascorbic acid that is present.

Organisms from the gram positive *Propionibacteriaceae* family are responsible for the flavour and texture of some fermented foods, especially Swiss cheese, where they are responsible for the formation of 'eyes' or holes in the cheese. These bacteria break down lactic acid into acetic and propionic acids and carbon dioxide.

Several other bacteria, for *instance Leuconostoc citrovorum L. Dextranicum, Streptococcus lactis, S. Cremis,* & *liquefaciens* and *Brevibacterium* species are important in the fermentation of dairy products. They are not discussed in detail in this manuscript.

Lactic acid fermentation

The lactic acid bacteria belong to two main groups – the homofermenters and the heterofermenters. The pathways of lactic acid production differ for the two. Homofermenters produce mainly lactic acid, via the glycolytic (Embden–Meyerhof) pathway). Heterofermenters produce lactic acid plus appreciable amounts of ethanol, acetate and carbon dioxide, via the 6-phosphoglucanate/phosphoketolase pathway. All lactic acid bacteria except leuconostocs, group III lactobacilli, oenococci and weissellas use the glycolytic pathway. Normal conditions required for this pathway are excess sugar and limited oxygen. Axelsson (1998) gives an in-depth account of the biochemical pathways for both homo- and hetero-fermenters.

Homolactic fermentation

The fermentation of 1 mole of glucose yields two moles of lactic acid;

Heterolactic fermentation

The fermentation of 1 mole of glucose yields 1 mole each of lactic acid, ethanol and carbon dioxide;

Conditions required for bacterial fermentations

Microorganisms vary in their optimal pH requirements for growth. Most bacteria favour conditions with a near neutral pH (7). The varied pH requirements of different groups of micro-organisms is used to good effect in fermented foods where successions of micro-organisms take over from each other as the pH of the environment changes. Certain bacteria are acid tolerant and will survive at reduced pH levels. Notable acid-tolerant bacteria include *the Lactobacillus* and *Streptococcus* species, which play a role in the fermentation of dairy and vegetable products.

Oxygen requirements vary from species to species. The lactic acid bacteria are described as microaerophilic as they carry out their reactions with very little oxygen. The acetic acid bacteria however, require oxygen to oxidise alcohol to acetic acid. In vinegar production, oxygen has to be made available for the production of acetic acid, whereas with wine it is essential to exclude oxygen to prevent oxidation of the alcohol and spoilage of the wine.

Temperature

Different bacteria can tolerate different temperatures, which provide enormous scope for a range of fermentations. While most bacteria have a temperature optimum of between 20 to 30°C, there are some (the thermophiles) which prefer higher temperatures (50 to 55°C) and those with colder temperature optima (15 to

20°C). Most lactic acid bacteria work best at temperatures of 18 to 22°C. The *Leuconostoc* species which initiate fermentation have an optimum of 18 to 22°C. Temperatures above 22°C, favor the *lactobacillus* species.

Salt concentration

Lactic acid bacteria tolerate high salt concentrations. The salt tolerance gives them an advantage over other less tolerant species and allows the lactic acid fermenters to begin metabolism, which produces acid, which further inhibits the growth of non-desirable organisms. Leuconostoc is noted for its high salt tolerance and for this reason, initiates the majority of lactic acid fermentations.

Water activity

In general, bacteria require a fairly high water activity (0.9 or higher) to survive. There are a few species, which can tolerate water activities, lower than this, but usually the yeasts and fungi will predominate on foods with a lower water activity.

Hydrogen ion concentration (pH)

The optimum pH for most bacteria is near the neutral point (pH 7.0). Certain bacteria are acid tolerant and will survive at reduced pH levels. Notable acid-tolerant bacteria include *the Lactobacillus* and *Streptococcus* species, which play a role in the fermentation of dairy and vegetable products.

Oxygen availability

Some of the fermentative bacteria are anaerobes, while others require oxygen for their metabolic activities. Some, lactobacilli in particular, are microaerophilic. That is they grow in the presence of reduced amounts of atmospheric oxygen. In aerobic fermentations, the amount of oxygen present is one of the limiting factors. It determines the type and amount of biological product obtained, the amount of substrate consumed and the energy released from the reaction. Acetobacter require oxygen for the oxidation of alcohol to acetic acid.

Nutrients

All bacteria require a source of nutrients for metabolism. The fermentative bacteria require carbohydrates – either simple sugars such as glucose and fructose or complex carbohydrates such as starch or cellulose. The energy requirements of micro-organisms are very high. Limiting the amount of substrate available can check their growth.

Principles of lactic acid fermentation

Sauerkraut is one example of an acid fermentation of vegetables. The name sauerkraut literally translates as acid cabbage. The 'sauerkraut process' can be applied to any other suitable type of vegetable product. Because of the importance of this product in the German diet, the process has received substantial research in order to commercialise and standardise production. As a result, the process and the

contributing micro-organisms are known intimately. Other less well known fermented raw materials and vegetables have received less research attention, therefore little is known of the exact process. It is safe to assume however that the acid fermentation of vegetables is based on this process.

Lactic acid fermentations are carried out under three basic types of condition:– dry salted, brined and non-salted. Salting provides a suitable environment for lactic acid bacteria to grow which impart the acid flavour to the vegetable.

Salt for pickling

For pickling any variety of common salt is suitable as long as it is pure. Impurities or additives can cause problems. Salt with chemicals to reduce caking should not be used as they make the brine cloudy. Salt with iron impurities can reduce the acidity of the end product and reduce the shelf life of the product. Salt with iron impurities can result in the blackening of the vegetables. Magnesium salts impart a bitter taste. Carbonates can result in pickles with a soft texture.

Brine salted fermented vegetables

Brine is used for vegetables, which inherently contain less moisture. A brine solution is prepared by dissolving salt in water (a 15 to 20% salt solution). Fermentation takes place well in a brine of about 20 salometer. As a general guide, a fresh egg floats in a 10% brine solution (Kordylas, 1990). Properly brined vegetables will keep well in vinegar for a long time. The duration of brining is important for the overall keeping qualities. The vegetable is immersed in the brine and allowed to ferment. The strong brine solution draws sugar and water out of the vegetable, which decreases the salt concentration. It is crucial that the salt concentration does not fall below 12%, otherwise conditions do not allow for fermentation. To achieve this, extra salt is added periodically to the brine mixture.

Once the vegetables have been brined and the container sealed, there is a rapid development of micro-organisms in the brine. The natural controls which affect the microbial populations of the fermenting vegetables include the concentration of salt and temperature of the brine, the availability of fermentable materials and the numbers and types of micro-organisms present at the start of fermentation. The rapidity of the fermentation is correlated with the concentration of salt in the brine and its temperature.

Most vegetables can be fermented at 12.5° to 20° salometer salt. If so, the microbial sequence of lactic acid bacteria generally follows the classical sauerkraut fermentation described by Pederson (1979). At higher salt levels of up to about 40° salometer, the sequence is skewed towards the development of a homofermentation, dominated by *Lactobacillus plantarum*. At the highest concentrations of salt (about 60° salometer) the lactic fermentation ceases to function and if any acid is detected during brine storage it is acetic acid, presumably

produced by acid-forming yeasts which are still active at this concentration of salt (Vaughn, 1985).

Brine salted fermentation of vegetables (Pickles)

Pickled cucumbers are another fermented product that has been studied in detail and the process is known. The fermentation process is very similar to the sauerkraut process, only brine is used instead of dry salt. The washed cucumbers are placed in large tanks and salt brine (15 to 20%) is added. The cucumbers are submerged in the brine, ensuring that none float on the surface - this is essential to prevent spoilage. The strong brine draws the sugar and water out of the cucumbers, which simultaneously reduces the salinity of the solution. In order to maintain a salt solution so that fermentation can take place, more salt has to be added to the brine solution. If the concentration of salt falls below 12%, it will result in spoilage of the pickles through putrefaction and softening.

A few days after the cucumbers have been placed in the brine, the fermentation process begins. The process generates heat which causes the brine to boil rapidly. Acids are also produced as a result of the fermentation.

During fermentation, visible changes take place which are important in judging the progress of the process. The colour of the cucumber surface changes from bright green to a dark olive green as acids interact with the chlorophyll. The interior of the cucumber changes from white to a waxy translucent shade as air is forced out of the cells. The specific gravity of the cucumbers also increases as a result of the gradual absorption of salt and they begin to sink in the brine rather than floating on the surface.

Microbes involved in the fermentation process

As with the sauerkraut process, the gram-positive coccus - *Leuconostoc mesenteroides* predominates in the first stages of pickle fermentation. This species is more resistant to temperature changes and tolerates higher salt concentration than the subsequent species. As fermentation proceeds and the acidity increases, lactobacilli start to take over from the cocci. The active stage of fermentation continues for between 10 to 30 days, depending upon the temperature of the fermentation. The optimum temperature for *L. Cucumeris* is 29 to 32°C. During the fermentative period, the acidity increases to about 2% and the strong acid producing types of bacteria reach their maximum growth. If sugar or acetic acid is added to the fermenting mixture during this time it increases the production of acid.

Problems in pickles

The production of excessive amounts of acid during the fermentation, results in shrivelling of the pickles, possibly due to over-activity of the *L. mesenteroides* species. If the brine is stirred, it may introduce air, which makes conditions more favourable for the growth of spoilage bacteria. In general, if the pickles are well covered with brine, the salt concentration is maintained and the temperature is at an optimum, it should be quite simple to produce good quality pickles.

Non salted, lactic acid fermented vegetables

Lactic acid bacteria, without the prior addition of salt or brine, ferment some vegetables. The fermentation process relies on the rapid colonisation of the food by lactic acid producing bacteria, which lower the pH and make the environment unsuitable for the growth of spoilage organisms. Oxygen is also excluded as the *Lactobacilli* favour an anaerobic atmosphere. Restriction of oxygen ensures that yeasts do not grow.

TYPICAL PRODUCTS OF BACTERIAL FERMENTATIONS

Many products are produced by bacterial fermentations. These include the raw material and vegetable pickles produced by lactic acid fermentation and the products of alkaline bacterial fermentations. Lactic acid bacteria pickling is still carried out at the domestic scale. However industrial scale processes have been developed for the production of most types of pickles. Storing prepared vegetables in a weak brine solution can make pickles, by dry salting or allowing the vegetables to ferment without salt.

Dry salted pickles

Dry salting is used for pickling many vegetables and raw materials including limes, lemons and cucumbers. For dry salt pickling any variety of common salt is suitable as long as it is pure. Impurities or additives can cause problems:

- Chemicals to reduce caking should not be used as they make the brine cloudy.
- Lime impurities can reduce the acidity of the final product and reduce the shelf life of the product.
- Iron impurities can result in the blackening of the vegetables.
- Magnesium impurities impart a bitter taste.
- Carbonates can result in pickles with a soft texture (Lal *et al*, 1986).

Dry salted lime pickle.

Product Description

With dry salting, the limes are treated with dry salt. The salt extracts and juice from the vegetable and creates the brine. The final product is a sour lime pickle. Spices are added depending on local preference. In India and Pakistan, the pickle is usually very spicy and hot due to the addition of chilli. It is usually eaten as a condiment.

Preparation of raw materials

The limes need to be selected and prepared. Only fully ripe limes without bruising or damage should be used. All limes need to be washed in potable cold water, drained, and then cut into quarters. Spices should be of good quality and free of mould.

Processing

Limes are placed in a layer, approximately 2.5 cm deep, into the fermenting container (a barrel or keg). One kilogram of salt is added for every four kilograms of limes. The salt is sprinkled over the vegetables. Another layer of vegetables is added and more salt added. This is repeated until the container is three quarters full. A cloth is placed above the vegetables and a weight added to compress the vegetables and assist in the formation of a brine. The formation of a brine takes about 24 hours. The container is then placed in the sun for a week.

As soon as the brine is formed, fermentation starts. As fermentation starts bubbles of carbon dioxide appear. Fermentation takes between one and four weeks depending on the ambient temperature. Fermentation is complete when no more bubbles appear. (Lal *et al*, 1986), (Kordylas,1990).

Flow diagram

Selection ↓	Only ripe limes should be selected
Wash ↓	In clean water
Cut ↓	Cut into four pieces or slice the skin
Mix with salt ↓	1kg salt for 4kg of limes
Ferment ↓	Leave the container in the sun for a week to ferment
Package ↓	

Packaging and storage

The vegetables can be removed from the brine and packaged in a variety of mixtures which may consist of vinegar and spices or oil and spices. Lime pickle can be packed in small polythene bags and sealed or in clean jars and capped. Lime pickles keep well if stored in a cool place. Due to the high acid level of the final product, the risk of food poisoning is low (Fellows, 1997).

Pickled cucumbers

Product description

Cucumbers undergo a typical lactic acid fermentation and change from a pale product to a darker green and more transparent product. *Khalpi* is a cucumber pickle popular during the summer months in Nepal (Karki, 1986).

Raw material preparation

Fully ripe cucumbers without bruising or damage are washed in potable cold water and drained. The cucumbers can be pickled whole or sliced. With *khalpi* the cucumbers are washed, sliced and cut into 5-8 cm pieces.

Processing

1 kg of salt is added to every 20 kg of small cucumbers and 15 kg of large cucumbers. The brine should be formed within 24 hours by osmosis. If the brine formed by osmosis does not cover the cucumbers 40° Salometer brine is added to the desired level. A day or two after the tank is filled and closed the brine should be stirred in order to help equalise the concentration of salt throughout the mass (Vaughn, 1985).

As soon as the brine is formed, fermentation starts and bubbles of carbon dioxide appear. Fermentation takes between one and four weeks depending on the ambient temperature. Fermentation is complete when no more bubbles appear.

During fermentation the brine becomes cloudy for the first few days due to the growth of bacteria. Later if the brine is not covered, a filmy yeast growth will often occur on the surface (Pedersen, 1979).

Flow diagram

Selection	Only ripe cucumbers should be selected
↓	
Wash	In clean water
↓	
Mix with salt	1kg salt for 15-20kg of cucumbers
↓	
Ferment	For between one and four weeks
↓	
Package	
↓	

Packaging and storage

Cucumber pickle is usually stored in clean capped jars. They keep well if stored in a cool place. Due to the high acid level of the final product, the risk of food poisoning is low. With *khalpi* in Nepal, oil is added.

Pickled leafy vegetable

Fermenting a local leafy vegetable produces this. The leaves are washed and drained. They are then covered in salt and hung on racks to dry in the sun. The wilted leaves are placed in earthenware pots and covered with rice water, obtained after washing rice grains. The pots are sealed and the leaves allowed fermenting for

four days. The product can be stored for up to two months if the seal is not broken (Steinkraus, 1996).

Pickled lemons)

Lemons are washed in clean water, sliced and covered in salt. After at least 24 hours, they are drained and mixed with oil and spices.

Brined raw material and vegetable pickles

For brine pickling any variety of common salt is suitable as long as it is pure. Impurities or additives can cause problems:

- Chemicals to reduce caking should not be used as they make the brine cloudy.
- Lime impurities can reduce the acidity of the final product and reduce the shelf life of the product.
- Iron impurities can result in the blackening of the vegetables.
- Magnesium impurities impart a bitter taste.
- Carbonates can result in pickles with a soft texture (Lal *et al*, 1986).

Green Mango Pickles

Product description

Green mango pickle is a hot, spicy pickle with a sour taste. It is eaten as a condiment. Preservation is caused by a combination of salt, increased acidity and to a small extent the spices. It is known as *burong mangga* and *dalok* in the Philippines.

Preparation of the raw material

The fresh, fully mature, firm but unripe mangoes must be carefully selected to ensure a good quality product. The best pickles are obtained from raw material at early maturity when the raw material has reached almost maximum size. Riper raw material results in pickles with a raw materialy odor and lacking the characteristic and predominant green mango flavor.

The green mangoes need to be inspected and any damaged raw material rejected. The raw material is washed in clean water and drained.

After draining, the raw material is cut. Sharp knives with preferably stainless blades should be used. Iron or copper equipment should be avoided. A single stroke should be used during the cutting process to ensure minimum damage and avoiding mushiness in the final product.

Processing

The sliced mangoes are soaked in brine solution. Sodium metabisulphite (1000 ppm) and 1% calcium chloride are added. The containers are stored until the

mangoes are pickled. The brine is then drained off and spices are mixed with the mango slices (Redelinghuys and Van der Riet, 1978).

Flow diagram

Raw material	The mangoes need to be unripe
↓	
Sort	Remove damaged raw material
↓	
Wash	With clean water.
↓	
Drain	
↓	
Cut	Stainless steel knives should be used
↓	
Soaked in brine	20% salt solution
↓	
Drain	Spices to taste
↓	
Add spices	
↓	
Pack	Pack in containers and add oil
↓	

Packaging and storage

The mixture is then packed and oil added onto the surface of the mixture. The mangoes should be firmly pressed down in the container. Good quality vegetable oil such as sunflower oil should be used and finely ground chilli powder can be added to the oil for flavour and colour. Mango pickle can be packed in small polythene bags and sealed or in clean jars and capped. Mango pickle keeps well if stored in a cool place. If it is processed well, it can be kept for several months. Due to the high acid level of the final product, the risk of food poisoning is low (Fellows, 1997).

Lime pickle (brined).

Product description

Lime pickle is made from salted pieces of lime packed in salty, spicy liquor, like semi-solid gravy. It is brownish red and the lime peels are yellow or pale green with a sour and salty taste. It is eaten as a condiment with curries or other main meals. If processed well, the product can be kept for several months.

Preparation of raw materials

The limes need to be selected and prepared. Only fully ripe limes without bruising or damage should be used. All the limes need to be washed in potable cold water and drained. The limes are dipped in hot water (60-65^{0}C) for about five minutes. They are then cut into pieces in order to expose the interior and allow salt to be absorbed more quickly.

All spices should be of good quality and free of mould.

Processing

The prepared limes are covered with a brine solution. This causes water to be drawn out of the pieces by osmosis. It is important to ensure that the surface is covered with juice, and leave for 24 hours. If necessary, the raw materials should be pressed down to hold them below the liquid. Once the limes have been placed in the brine, there is a rapid development of micro-organisms and fermentation begins.

After fermentation the limes are dried in the sun until the skin becomes brown.

Flow diagram

Sort ↓	Select ripe (but not overripe) healthy lime raw materials
Wash ↓	
Heat ↓	Dip in hot water (60-65^{0}C) for about five minutes
Cut ↓	Cut into four pieces or alternatively cut into smaller, uniform-sized pieces
Brine ↓	Ensure that the surface is covered with juice
Dry ↓	Dry in the sun for 2-3 days
Mix spices ↓	To local preference
Pack ↓	
Store ↓	In a cool place, away from sunlight

Packaging and storage

The limes are mixed with spices and oils according to local taste and tradition. Lime pickle can be packed in small polythene bags and sealed or in clean jars and capped. Lime pickle keeps well if stored in a cool place. Due to the high acid level of the final product, the risk of food poisoning is low.

Pickled Radish

A number of pickled radish products are produced. These include: *kaktugi, tongchimi,chonggak-kimchi, seokbakji, yolmu-kimchi dan moogi kach doo ki gactuki and mootsanji.*

Pickled cucumber

A variety of brine pickled cucumber products are made. In Egypt soaking in brine to produce torshi khiar pickles cucumbers.

Table Olive Processing

The science of table olives is very complex and successful processing is dependent on many factors, which are changing depending on the cultivars and local conditions.

In addition, there is a lot of complex, and often contradictory information, on many aspects of the olive industry. While every effort has been made to provide accurate information the author disclaims any liability that may arise in following any advice or information contained in this document.

Processing of table olives

Desirable Characteristics

- The desirable characteristics of table olives are:
- Good flesh to stonne ratio (above 5:1).
- Low oil content (below 20%).
- High sugar content (greater than 4%).
- Firm flesh.
- Easy separation of the flesh from the stonne.
- Soft, yet elastic, skin, resistant to handling and to the action of brine and alkalis.

Types Of Table Olives

Green olives

Olives are a brine-fermented product, which undergo an essential pre-treatment with lye to remove substances, which are toxic to bacteria and would, if left in the olives, prevent fermentation.

Green olives are placed in a 2% sodium hydroxide (lye) solution at 21° to 24°C until the lye penetrates the flesh. Cold water is added to the solution, which, dilutes the mixture until the lye is completely removed. The lye treatment is necessary to remove a bitter glucoside compound (oleuropein) from the outer tissues of the olive. Oleuropein is highly toxic to bacteria and therefore needs to be removed in order for a fermentation to take place. After the glucoside has been removed, the olives are placed in barrels with a 1 to 10% brine solution and allowed to undergo a spontaneous fermentation. The optimum fermentation temperature is 24°C. The fermentation period usually takes between two and three months. Once fermentation is complete, the olives are packed in airtight jars and sterilized which produces a good quality product with a long storage life.

Black olives

When ripe olives are used, they are placed in a 5 to 7% brine solution to soften the outer tissue before lye is added. This pre-treatment allows the lye to penetrate the raw material more easily. In ripe raw material, the glucoside is situated more deeply within the tissue. After soaking in brine, the lye solution (0.7 to 2.0%) is added and, after soaking, the olives are washed clean. They are then packed in barrels with a 2 to 5% brine solution and allowed to undergo fermentation for two to six weeks, depending on the external temperature. Unlike immature olives, the ripe one is exposed to air during fermentation. This is to oxidise the polyphenols in the tissue to a black color, which is dependent upon oxygen and the small amounts of sodium hydroxide, which are left on the olives. The finished product is packed in a 3 to 5% brine solution and then sterilized. *Bacillus subtilis* may produce pectolytic enzymes, which result in a soft product. If the wash water used for removing the lye is below 60°C, many species of undesirable bacteria can survive which result in a low quality product.

Olives turning color

These olives are obtained after the yellow straw color has changed to rose, wine rose or brown colour but before the raw material is fully ripe. As with the green olives they must be sound without any damage to the raw material.

Harvesting

So that olives are not bruised or damaged, the olives are harvested by hand. The time of harvesting is dependent on the type of olives intended to have e.g. green firm black, shrivelled. In general, olives are processed as soon as possible after harvesting. After separating any objects such as leaves and twigs, olives are washed and if necessary sorted according to size before processing commences.

Styles of Processing

In the olive industry there are three general styles of processing: American, Spanish and Greek.

American style

Not fully black olives are treated by alkali (sodium hydroxide, also called lye) to remove the bitter taste and they are turned black by oxidation.

Spanish style

Yellow-green olives are treated with lye but they maintain their green color.

Greek style

Naturally black olives are debittered with salt or brine. The issue of traditional brine treatment versus modern alkaline treatment is controversial, as is highlighted by the following comments of two Greek olive experts:

'We Greek specialists consider this type of processing [salt treatment] neither economical nor appropriate from the scientific point of view. Yet to our experience it is hard or even impossible to uproot it as being based upon long tradition.'

Another Greek scientist, however, is quoted as saying:

'The recent international trend for natural and unprocessed produce justifies the Greek authorities insistence in promoting olives which are preserved by the use of salt or brine.'

Processing

The main objective of processing is to remove the bitter taste - which comes from the oleuropein - of fresh olives. Oleuropein is a phenolic compound which although not poisonous has to be removed in order to improve the organoleptic qualities of olives.

Traditionally the removal of oleuropein was done with the use of unprocessed sea salt. With some types of olives immersion in water prior to salt treatment speeds up the debittering process. In recent years the bulk of olives are debittered with the use of alkali.

Bear in mind that the term treated is used when olives are processed by the use of alkali while the term untreated is used when the olives are subjected only to salt or brine treatment.

Green olives - commercial method, also known as Spanish style

Gordal, Manzanilla and Morona are the varieties commonly used in Spain for this type of olive.

The olives are initially treated in a lye solution. So as to avoid blistering of the olive skin, the alkaline solution is prepared one day in advance.

The lye should penetrate to about 2/3 or 3/4 through the flesh. If the lye does not penetrate deep enough the bitterness will not be complete and the subsequent fermentation will not be satisfactory. However, a penetration of lye to the stonne will result in the softening and spoiling of the olives. Depending on the variety and other conditions the lye treatment will last 6-11 hours.

Following the lye treatment the olives are washed thoroughly - to remove the lye solution. The washing will last a few hours and the duration will normally be dependent on the strength of the lye solution. Excessive washing will remove some of the sugars while insufficient washing, in addition to other problems such as high pH value, will not remove the bitterness of the olives.

Following the lye treatment the olives are placed in brine where they undergo a lactic fermentation. The strength of the brine is dependent on the variety. Initially the strength is about 10% and eventually is reduced to about 6% where the lactic fermentation will take place. Following the lactic fermentation, the brine solution is gradually increased to about 8%.

Darkened olives - commercial method, also known as American style

The olives are harvested when their color starts changing from straw green to purple. These olives may or may not be treated by immersion in brine before lye treatment. So that wrinkling of larger olive varieties such as Gordal and Ascolano is avoided, the brine solution for these varieties is weaker. The lye treatment is alternated with exposure to air - which changes the color of the olives to black. The lye solution is then drained and the olives are immersed in water for a more effective removal of the lye. This is followed by pasteurisation with heat treatment. The olives are then placed in brine and packaged for the market. As no fermentation takes place these olives are rather bland.

Black olives - untreated olives in brine

Traditionally, the optimum harvesting time for this type of olive is when the olives are almost fully ripe and the color change has penetrated up to 1mm from the stonne.

Now-a-days it is possible to harvest when the color change has reached only half way to the stonne.

As soon as the olives are washed they are placed in an 8 - 10% brine solution where debittering and fermentation will take place. As mentioned before, the olives should be submerged in the brine. Because brine strength will be weakened from absorption by the olives, additional salt must be added at a later stage after the fermentation is over. Under these conditions the fermentation is conducted under anaerobic conditions (without air). It is also possible to conduct the fermentation by injecting air (aerobic fermentation).

Kalamata olives

For this type of olive you will need the Kalamata variety. The olives are harvested when they are ripe but before they start to shrivel. After washing, the olives are slashed to the stonne (two slashes opposite each other longitudinally). The olives are then immersed in water or a week brine solution. The water is changed daily for about five days. By this time the oleuropein - which is less in this variety - is largely removed. The olives are then immersed in vinegar or vinegar concentration (vinegar and water) for one or two days. The olives are then packaged in a brine solution (about 6%) and topped up with olive oil (to prevent the olives from floating above the brine).

Preservation

The preservation of olives is achieved by a combination of three factors: acidity (low pH value), salt and anaerobic conditions. Depending on the variety and the processing method, one of these factors prevails.

Environment Pollution - from Waste Water

This is a major problem for the table olive processing industry. The main products of this pollution are the alkaline waste (from the use of lye), the wash water and the acid water (from the brine). The following table (from 'Table Olive Processing', International Olive Oil Council (IOOC) page 78) is indicative of the highly pollutant nature of the wastewater.

Main characteristics of wastewater from Sevillan-style green olives

Characteristics	Brine	Lye and wash water
pH	3.9	9-12
Free NAOH(g/l)	-	11-1.5
NaCl (g/l)	6-10	-
Free acidity (g lactic acid/l)	6-15	-
Polyphenols (g tannic acid/l)	5-7	4.1-6.3
COD (g O2/l)	10-20	23-28
D5 (g O2/l)	9-15	15-25
Volatile solids (organic) (g/l)	10-20	30-40

Trade Preparations of Olives

Treated green olives in brine. They are treated by lye before being placed in brine.

Untreated green olives in brine. No lye treatment, the fermentation takes place in brine.

Olives turning color treated in brine. Alkaline treatment followed by brine, by heat treatment or a combination of the two.

Untreated olives turning color, in brine. No alkaline treatment; placement in brine.

Treated black olives in brine. Alkaline treatment followed by brine, by sterilization or pasteurization.

Treated black olives in dry salt. Light alkaline treatment followed by placing the olives in layers alternated with dry salt.

Untreated black olives in brine. No alkaline treatment; natural fermentation in brine.

Untreated black olives in dry salt. No alkaline treatment; they are treated in alternate layers of dry salt.

Untreated naturally shrivelled black olives. Naturally shrivelled black olives – on the tree - which are treated only by salt.

Production Plan Basic Assumptions

The full production capacity is assumed to be 8000 tonnes per year (starting from year 5.

- Plant operates at 100 % efficiency
- Plants operates for 24hrs/day
- Processing continues for 12 month as follows:

Seasonal Utilization of Producing Capacity (Percentage)

Product	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG ***	SEP	OCT	NOV	DEC
Preserved Olives	80%	70%	0%	0%	0%	0%	0%	0%	80%	80%	80%	80%
Marinated Vegetables												
Lemon	0%	0%	0%	0%	0%	0%	0%	10%	10%	10%	10%	10%
Cucumber	0%	0%	20%	20%	0%	0%	0%	0%	0%	0%	0%	0%
Tomatoes	0%	0%	20%	0%	20%	20%	0%	0%	0%	0%	0%	0%
Grape Leaves	0%	0%	0%	0%	0%	0%	20%	20%	0%	0%	0%	0%
Onions	0%	0%	20%	20%	20%	20%	0%	0%	0%	0%	0%	0%
Garlic	0%	0%	20%	20%	20%	20%	0%	0%	0%	0%	0%	0%
Mushrooms	0%	0%	0%	20%	20%	0%	0%	0%	0%	0%	0%	0%
Cauliflower	0%	0%	0%	0%	0%	20%	40%	0%	0%	0%	0%	0%
Mixed Vegetables	0%	0%	0%	20%	20%	20%	0%	20%	0%	0%	0%	0%
Mangoes	0%	0%	0%	0%	0%	0%	10%	10%	0%	0%	0%	0%
Artichokes	10%	20%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Asparagus	10%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Pepper	0%	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%
Total	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%

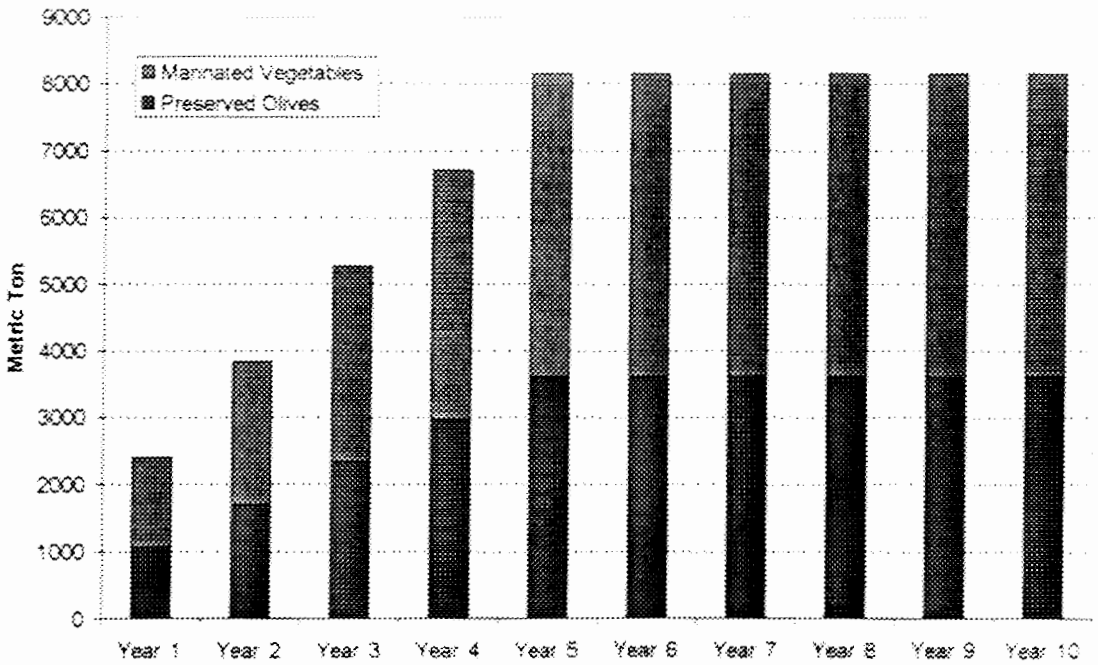
* Calculated according to seasonal availability (and farm gate prices) of raw materials in Egypt

** Ensure full utilization of production capacity

*** Annual Maintenance

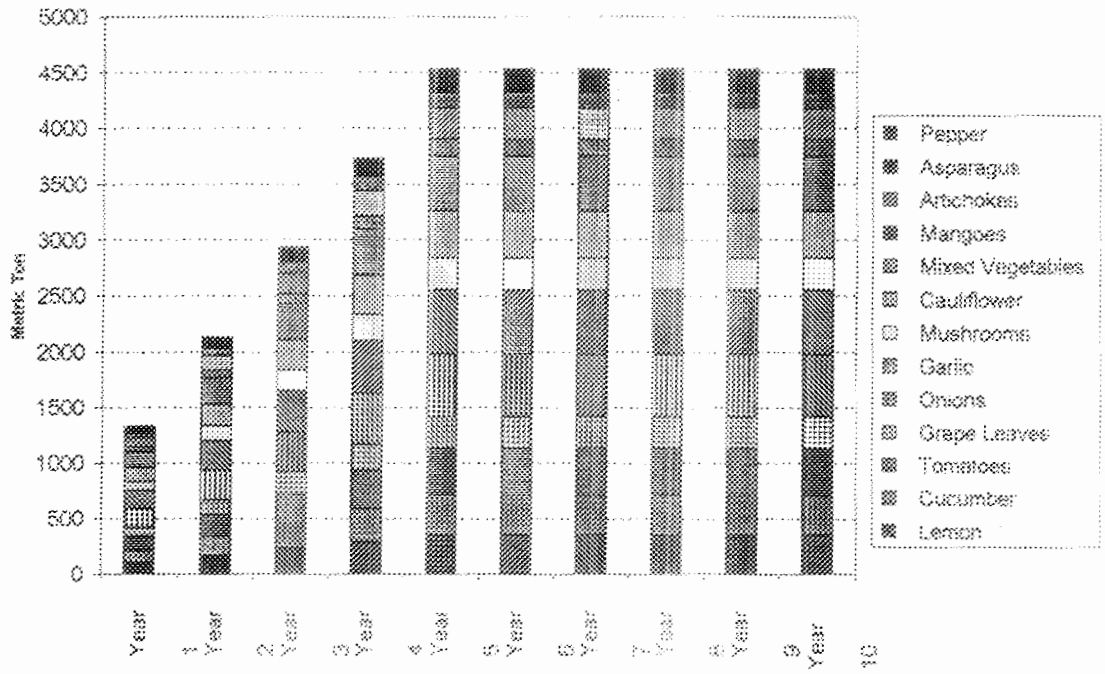
It is assumed that production will start at a capacity of 2500 tons and increase gradually to reach the full capacity by the year five and continues at this level to the end of the project.

Production Plan (Year 1-10)



Production of pickled vegetables indicated in the following graph

Production Pickled Vegetables (Year 1-10)



Establishing the Processing Plant

Building Costs

Plant building costs depends entirely on the proposed throughput, including storage facilities. Product storage includes a minimum of six weeks maximum processing capacity, which may have to hold a half-year full production. This would take into account holding some of last year's production.

Blending and separation of varieties and qualities are considered in sizing and number of tanks. They are planned to be capable of minimizing spoilage

Infrastructure

Water, electricity, waste, inputs, roadways, and HACCP requirements are considered.

Staff, Skills and Training

Depending on the size of the plant, this can be matched to throughput. However, a minimum should be 2 per shift. Untrained staff could lead to product spoilage and loss of brand or market share.

Transport and Storage Options

The following items are considered when evaluating transport to an adjacent site for processing or storage waiting processing at a local processing operation. Undercover storage for inwards raw material is imperative, full sun and too much

weight on the raw material can cause premature breakdown and therefore reduce quality of the product in that batch.

Typically raw material will be delivered in bulk bins with capacity of about 350-380 kgs stacked 3 high. Bulk handling from grove to processing may be an area for innovation in handling. Planning the harvesting and transport to the plant is critical if management of different growers raw material and differing varieties is to be successful. Truckloads must be planned so that the distances and road surfaces do not damage the raw material.

Storage for Finished Product

Stainless steel tanks are required for the product. The acidic content demands special types of stainless and therefore buying second hand tanks may be a mistake. The volume of storage required depend on plant capacity, numbers of different varieties; grades of production and market conditions. Some product may be shipped out early to a blending and packaging center, but storage will still be required for a large proportion of the production. It is likely that product will be stored for more than 6 months possibly up to a year.

Processing Equipment Appraisal

Cost and Issues Involved in Establishing the Processing Plant

Determining the correct size and type of equipment is of course influenced by the olive and vegetable inputs and by the desired outcome in terms of output to suit the identified market.

Considerations for Plant Sizing

Equipment Type

For this project only continuous, automatic equipment has been considered.

This process comprises:

- Raw material receival and weighing
- Leaf removal and washing
- Stonne removal
- Washing
- Processing
- Transfer to storage tanks
- Appropriate testing of finished product

Essential systems requirements include buildings, potable water, electricity, water heater and fuel for heating, pumps, inwards goods and final product storage and also disposal systems for wastewater and olive paste.

Building Requirement

Equipment for processing 2 tonnes per hour is typically 16 meter long, 5 meter wide and 4 meter high.

Space is unlikely to be a restriction for Sawa, thus a building substantially larger than these dimensions will provide good working conditions and permit access for fork lifts to service heavy objects in the processing line. Most equipment is capable of taking modular editions to increase capacity. This is usually in extra width. A building of twice the width of the equipment originally purchased will allow for that expansion.

A six meter high building is very adequate, so long as large bulk storage vessels are not included in the same building. In the section on storage, it is reported that if bulk storage vessels are under cover, building height should be no less than 7 meters. An additional 2 meters on tank height is required for access above the tanks.

Resources Required

Electric power and water are key elements. Depending on boiler style, LPG, Diesel or a husk fired boiler fuel will be required. If a husk fired boiler is used, storage for dried husk from season to season is required.

Electricity consumption is estimated at 21 kWh for a 1 tonne per hour processing line and 47 kWh for a 3.5 tonne per hour capacity. This broadly equates to 155 kWh for 1 tonne product from the former and 99 kWh for the latter.

In-put water must be of potable quality. Filtration and chlorination will be required if reticulated town or adequate rain water supply is not available. Approximately 300 liters of water per 1000 kgs of olives processed is indicated. Poundage for effluent water is required. Minimum water consumption is 300 l water per tonne of olives produced.

Effluent water is "harsh" with a typical pH of wastewater at 4.5-5.8. Treatment of this water by addition of lime to make it less acidic will be required before disposal and BOD5 levels should be reduced by aeration. For each 1000 tonnes of olives processed 300,000 liters of wastewater will be produced. Several ponds may be required if the water is used for irrigation purposes as treated; "irrigation water" should not be continuously mixed with new wastewater.

Estimates of gas consumption are about 100Mjs per tonne of olives. External storage for gas supply is required.

Bulk Storage

Storage of finished product will require stainless steel tanks of sufficient capacity to hold at least one season's production. Storage should be at even temperature. Upright tanks have smaller surface area for oil likely to be exposed and are recommended before horizontal tanks. A conical base for tanks allows any settling in storage to be monitored.

Processing Equipment

The only processing style considered in this project is continuous and automatic and has the capability to operate over very long periods with very limited down time. The food industry generally relies on long processing times in continuous automatic equipment

The following table describes the processing equipment:

1.- Recollection Calibrating Treatment:	
Reception Hopper for olive's cont.	1
Elevator grooved band	1
Recalibrating	1
Special Device Hopper to feed sorting tables	1
Sorting tables	2
Belt convey. pick from sorting tables	2
Elevator to aerial tanks	1
Elevator to drums	1
Belt conveyor to feed aerial tanks	1
Special pump equipment for olives	1
Special pump for brine	1
Elevator to calibrating machine	1
Calibrating machine	1
Inundated reception hopper	1
Basket Elevator	1
Automatic take-off olive's tails (Steamer)	1
2.- Pitting/Slicing:	
Inundated reception hopper	1
Automatic pitting machine	2
Elevators in stainless steel	6
Densymeter	1
Inspection belt	1
Automatic slicing machine	1
Washing machine	1
3.- Canning Line:	
Inundated reception hopper	1
Inspection belt	1
Hot water washing	1
Rotary Table for empty cans	1
Automatic filling machine	1
Weight control point	1
Automatic brine dosifying	1
Automatic closing for jars	1
Re-built closing for small cans 200 c/min	1
Re-built closing for A10 cans 60 c/min	1

Re-built closing semi-auto for 5kg 15 c/min	1
Automatic sterilizer	1
Baskets for sterilizer	12
Automatic Pasteurize 10 meters	1
Washing and drying tunnel	1
Accumulation table	1
Automatic labeler for jars with glue	1
Table for fill up carton boxes manually	1
Retractile Tunnel	1
Automatic carton boxes sealer	1
Conveyors to connect all machine	1
4.- General Erection	1
5.- Installation, Equipment and Commissioning:	
Storage tanks "ferment adores"	200
Tanks for treatment	10
Tanks for oxidation	8
Tanks for brine and soda	4
Steam Installation (without boiler)	1
Air blowers	2
Screw air compressor	1
Air compressed installation	1
Water installation (without pumps)	1
Inst. of prep. brine and soda for treat and oxide	1
Inst. Recuperation of hot water (inc. Tower)	1
Inst. of prep. brine for canning	1
Electrical Installation	1
Oxidation Installation for 8 tanks	1
Training at site 15 days	1
Training in Spain four people 1 week	1

Staffing Requirement and Training

Current experience and equipment suppliers indicate that for up to 3 tonnes of raw material processing per hour one trained operator and one unskilled operator are required per shift. In addition to this a site manager is required to coordinate the operations.

Tasks include quality management, scheduling inputs, reporting outcomes, overall plant management. This may not be full time and would depend on the extent of vertical integration on the site.

Equipment suppliers will initially train staff during the commissioning process. Further on the job training will be required. Where networks are formed within the industry opportunities will be available for operator skills to be benchmarked and benefits to be transferred form successful operators to those in a start up phase.

Quality Management, Quality Assurance and HACCP

Several aspects of quality standards, quality management and assurance and control of production must be considered in this feasibility project.

Quality Standard is the standard of products to be produced. This must meet the specifications required by the intended customer. . Providing what the customer wants, when the customer needs it and at a price the customer expects to pay is the quality standard that should be produced.

Quality Management and quality assurance direct the operating enterprise to manage the operation according to a plan and maintaining a program to document the system. A quality management system will have points to note corrective action and will maintain records of what has taken place. The management staff of the processing plant must demonstrate a commitment to the process of continuous quality management and have in place systems to measure performance and record performance.

The quality assurance system should include, right from inception, the principles of Hazard Analysis and Critical Control Points. HACCP is a process of assessing and monitoring food safety risk. There are seven steps in the HACCP system recommended by Codex Alimentarius Commission. Intending investors processing plants should develop HACCP based quality assurance programs for application from day 1.

Private consultants and Local Government environmental health officers can provide professional advice on the process of HACCP and food safety plans.

The processor should report back to the producer on the key features of the delivered raw material. Variety and volume of raw material, visual assessment of the product and it is characteristics. All these features have influence on the product produced. The processor should take advantage of analysis by third parties of both raw material and product.

Other Considerations

Water Quality as an input of the processing plants is an important consideration. Water quality for use in the process should be of potable standard. (Potable water is suitable for drinking) Water clean up may be necessary before use. Filtration to clear of solids and chlorination to reduce microbiological contamination may be required.

The rate of use of water in a plant processing 1 tonne of olives per hour is approximately 200 to 300 liters per tonne of olives or approximately 1400 liters per tonne of product produced In addition to the volume used in the processing is water used in wash down and clean up. Care should be taken to use only acceptable biologically degradable compounds in wash down/cleanup water.

Potable water should be used where equipment contact is indicated, other wash down water, floors, walls etc need not be of such quality.

Wastewater is acidic and difficult to dispose of. Typical quality of the wastewater, called "black" or "vegetative" water has a composition of:

pH 4.5 to 5.8
Suspended solids 20,000 mg/l
BOD5 2000 mg/l
Chem. Oxygen Demand >50000mg/l
Fats, oils & grease 1.5-2% (1500-2000 mg/l)

Water with these characteristics is "harsh", with the high acidity being unacceptable in most places.

But the waste can be neutralized with the addition on lime to bring the pH closer to 7.0 or to the level required for irrigation.

The BOD mass is very high and if left in an anaerobic state will give rise to unacceptable odours. Odour levels are specified in regulations. Odour is reduced by circulation and air addition. Left to pond and not move, water with these characteristics will smell badly but the odour can be reduced with aeration even through simple circulation with a surface spray as an outlet.

In such large-scale food processing plants where wastewater with not too dissimilar characteristics is produced, the waste is neutralized with lime to make the mix less acidic; ponding the water is required and monitored so that air is regularly introduced and the total mass regularly assayed.

The waste may be used as addition to irrigation water to irrigate high demand agricultural crops.

There are opportunities to convert this waste material into a useful resource and treatment may require relatively small investment at the plant to add value.. Professional agronomic advice will be required to identify crop prospects for use of this water. High biomass crops such as cereals and fodder crops including Lucerne have a high demand and will most likely handle the high BOD content easily.

Pomace

The volume of "solid" waste will 5 to 10% of the raw material input. This waste bulk material, paste or pomace must also be disposed of appropriately. It does have a use as stock feed if it is dry and de-stoned or it can be used as mulch.

Separated olive stone material can be utilized as a high value fuel source in either a loose form or pressed into briquettes. Pressing into briquettes requires additional equipment the cost of which makes this alternate not economical.

De-stoned pomace has typical characteristics of:

Crude protein 8.3 to 15.4%
Crude fat 8.0 to 24.6%
Crude fibre 21.4 to 41.4%

Nitrogen free extract 24.2 to 47.8%
Ash 3.1 to 13.4%

Pieralisi state that no more than 12 to 20% of pomace should be used in any ration. The simplest use is as mulch for olive trees where caking of the waste on the surface should be checked and avoided. Where close to markets, dry pomace may be offered as a horticultural composting material If no other alternative is available, waste disposal in public waste disposal sites is an option.

3

Project Modeling & Financial Analysis

This chapter sets out the development of a financial model for the project. The detailed model is presented in the Appendix.

Rationale

The model is constructed to determine profitability and cash flow. The two key results of the model are the amount of equity capital required and the "return on investment" on that equity.

The main factors affecting the financial viability of the processing plant is the cost of raw material and the price obtained for the final product. The model determines the effect on equity required and returns on investment of variations in these variables. It is used to determine the effect of changes in other variables, e.g. key inputs such as labor and electricity.

The manufacturer and agents of equipment from Spain have provided processing data together with capital and operating costs.

It must be stressed that the model is an approximation of the financial viability of a processing plant, and the effects of changes in costs and prices. Decision to build a processing plant is based on detailed analysis, the development of a financial model with monthly rather than annual rests (to accurately estimate working capital), and preparation of a professional business plan to assess the amount of investment required and a sophisticated analysis of risks.

Assumptions

Asset Schedule

Schedule of capital expenditure is based upon estimates of the cost of various asset classes including land, buildings, plant & equipment, office equipment and vehicles. Estimates are based on actual quotations obtained for specific asset.

The model collects the asset classes into an Asset Register and calculates the annual depreciation applicable to each asset class, based on the assumed. Investment decisions are based on financial forecasts.

The model does not provide for any plant and equipment to process wastewater or solid waste. These are non significant problems, as outlined elsewhere in this report. The costs of handling the waste streams are discussed under Processing Costs.

Processing Data

The consumption rates for power, gas and fresh water are based on data from plant manufacturers. There is a discrepancy between the amount of fresh water used and the amount of wastewater produced. They are based on two different methods of calculation.

Labor requirements are as specified by manufacturers for modern continuous plants. It is assumed that casual labor will be employed, despite the high skill levels needed. In addition, provision is made from Year 4 for additional unskilled labor during the processing season and from Year 3 for permanent factory labor, initially on a part-time basis.

Processing and Administration Costs

Processing and administration Costs are summarized in the flowing tables, showing the start-up year and Year 5.

Recurrent Inputs (Year One)

Cost Item (LE)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Raw Material (LE)	108,250	102,083	52,083	52,083	39,583	37,500	56,333	16,667	97,917	97,917	97,917	97,917	656,250
Packaging Materials* (LE)	75,652	75,652	75,652	75,652	75,652	75,652	75,652	37,826	75,652	75,652	75,652	75,652	870,000
Filling Materials (LE)	113,478	113,478	113,478	113,478	113,478	113,478	113,478	56,739	113,478	113,478	113,478	113,478	1,305,000
Direct labor (LE)	10,625	10,208	5,208	5,208	3,958	3,750	5,833	1,667	9,792	9,792	9,792	9,792	85,625
Power Consumption (LE)	11,688	11,229	5,729	5,729	4,354	4,125	6,417	1,833	10,771	10,771	10,771	10,771	94,188
Water Consumption (LE)	5,313	5,104	2,604	2,604	1,979	1,875	2,917	833	4,896	4,896	4,896	4,896	42,813
Sales & Marketing (LE)	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	95,000
Research & Development (L	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	36,000
General & Administrative (LE	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	83,000
Admin. Salaries (LE)	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	735,220
Maintenance (LE)	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	963,806
Insurance (LE)	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	963,806
Other (LE)													
Total (LE)	562,742	557,492	494,492	494,492	478,742	476,117	502,367	355,301	552,242	552,242	552,242	552,242	6,130,706

Table Olive & Pickled Vegetables Project

Recurrent Inputs (Year Five)

Cost Item	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Raw Material	361,250	347,083	177,083	177,083	134,583	127,500	198,333	56,667	332,917	332,917	332,917	332,917	2,911,250
Packaging Materials*	257,217	257,217	257,217	257,217	257,217	257,217	257,217	128,609	257,217	257,217	257,217	257,217	2,958,000
Filling Materials	385,826	385,826	385,826	385,826	385,826	385,826	385,826	192,913	385,826	385,826	385,826	385,826	4,437,000
Direct labor	36,125	34,708	17,708	17,708	13,458	12,750	19,833	5,667	33,292	33,292	33,292	33,292	291,125
Power Consumption	39,738	38,179	19,479	19,479	14,804	14,025	21,817	6,233	36,621	36,621	36,621	36,621	320,238
Water Consumption	18,063	17,354	8,854	8,854	6,729	6,375	9,917	2,833	16,646	16,646	16,646	16,646	145,563
Sales & Marketing	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	95,000
Research & Development	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	36,000
General & Administrative	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	83,000
Admin. Salaries	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	735,220
Maintenance	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	963,806
Insurance	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	963,806
Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1,337,955	1,320,105	1,105,905	1,105,905	1,052,355	1,043,430	1,132,680	632,658	1,302,255	1,302,255	1,302,255	1,302,255	13,940,008

251

Financial plan

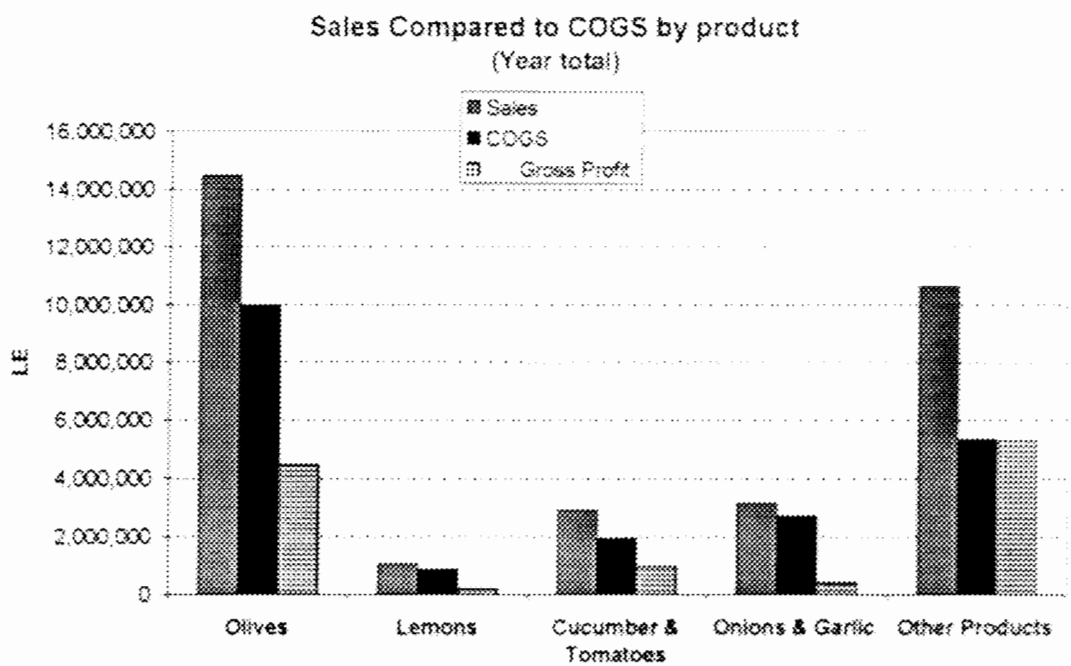
This financial portion of the project feasibility report is a narrative that presents summaries of the financial projections and the assumptions they are based on, projected capital requirements and how the capital will be used, and the company plan to repay lenders and/or investors.

Projected Financial Statements

Financial statements are used to determine if the project is viable, and if so, what capital the company will require to proceed. These financial statements model the financial operation of the project according to the production process flow. Financial statements are also used to perform the financial projections and pro forma statements.

Gross Profit Analysis Statement

The Gross Profit Analysis statement indicated in table (F-1) presents a breakdown of the month-by-month sales, cost of goods sold, and gross profit for each product. It includes the profitability of the products and how they contribute to the project total gross profit.



Gross profit statement indicated that:

- The group of mushrooms, cauliflower, mixed vegetables, mangoes, artichokes, asparagus, pepper, and grape leaves has the highest gross profit as percentage of total sales (49.77%) as the year total.
- Cucumbers and tomatoes ranked the second in terms of expected gross profit as percentage of total sales (33.89%) as the year total.
- Table olives ranked the third in terms of gross profit statement as percentage of total sales (30.83%) as the year total.
- Lemons ranked the fourth with gross profit as percentage of total sales 18.30% as the year total.
- Onions and garlic group has the lowest gross profit as percentage of total sales (18.30%) as the year total.

Budget Statement

The budget statement (Table F-2) presents a month-by-month projection of revenues and expenses over a one-year period at full capacity. Budget presents a more detailed accounting of expenses than an Income Statement. Functional areas group expense details. The details of the budget are broken down into the following major categories:

- **Sales:** Expected revenues generated from selling products, recorded on FOB (free on board) basis. Sales recorded by products that are appropriate for the management of the project. Unit sales prices are estimated according to the available market prices at the time of preparing this analysis.

- **Cost of Goods Sold**: The costs of goods sold are recorded in the same time period (monthly) as the sales revenue. Cost of Goods Sold consists of material, labor and fixed cost of goods sold expenses.

  - **Material**: This expense category allocated for raw products and production inputs. A percentage of 5% is added to the material costs to allocate "freight in", the charges for shipping the material to the factory.

  - **Other recurrent inputs**: includes **Labor**: This expense category allocated for the cost of the salaries for workers directly involved with manufacture of the products. A percentage of 40% is added to the labor costs to allocate the employee benefit expenses. **Water, Power, and fuel** are estimated according to the technical specifications of the product lines as provided by manufacturer.

- **Fixed Costs of Good Sold**: Fixed costs of goods sold considered in this analysis are the costs associated with producing of the targeted products that tend to remain the same whether sales volume increases or decreases. The following are the fixed cost of goods sold (expenses) included in your budget:

Production Management Salaries: Salaries of personnel who hold "permanent" production management positions; in other words, positions that exist independent of sales volume, rather than positions that are regularly added or eliminated as sales volume fluctuates. This includes supervisors and foreman positions as indicated in the following organizational chart.

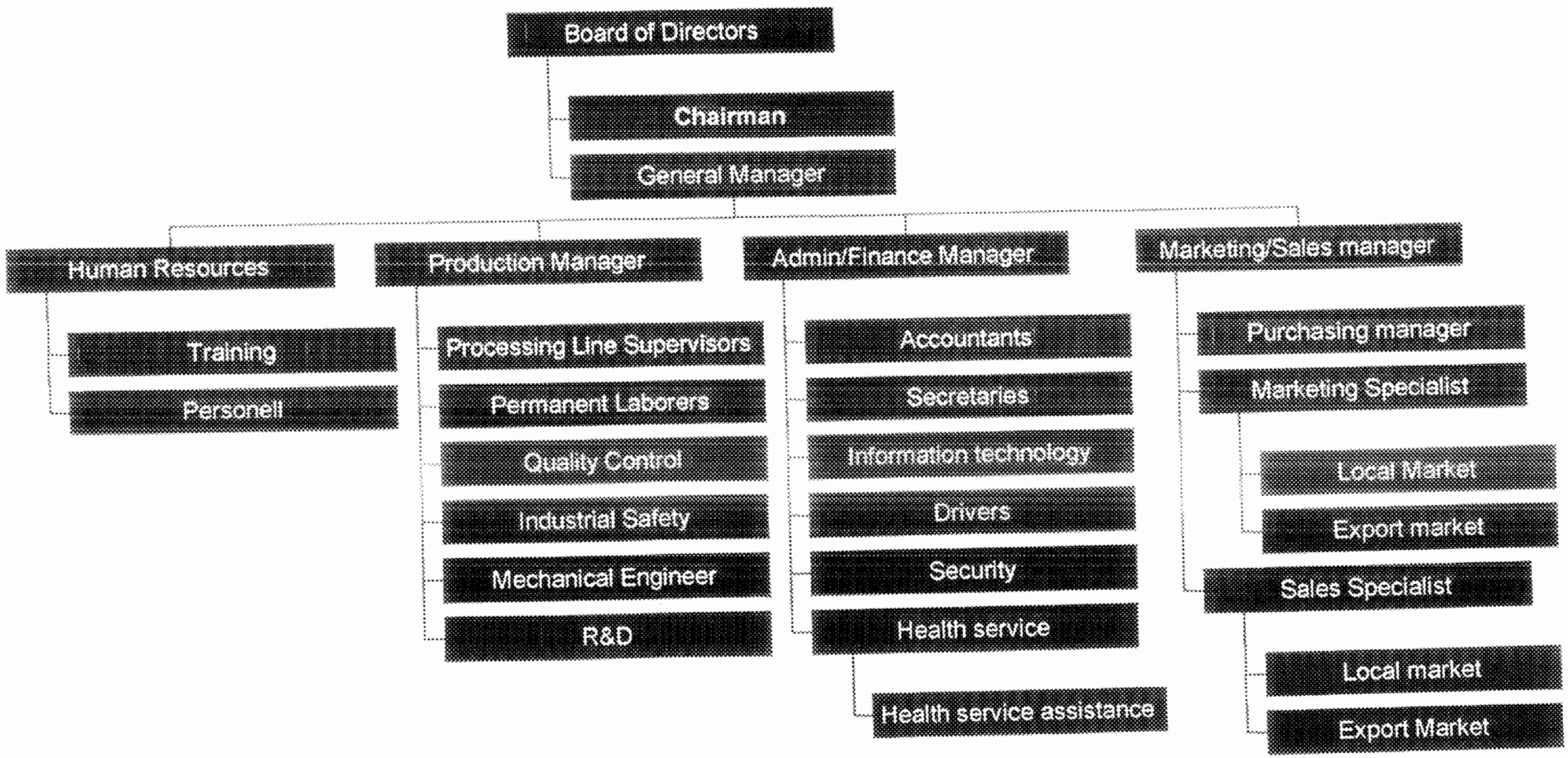
Proposed salaries and incentives are indicated in the following table:

Production Management Salaries*

Type	No.	M. Salar	Incentive &Other Expense	Annua
Top Management				
Chairman	1	10,000	2000	154,00
Co Chairman	1	7,000	1400	107,80
Production Manager	1	3,000	600	46,200
Sales/Marketing Manager	1	3,000	600	46,200
Admin/Finance Financial Manager	1	3,000	600	46,200
Purchasing manager	1	3,000	600	46,200
R&D and Training Manager	1	3,000	600	46,200
Total Quality Assurance Manager	1	3,000	600	46,200
Mechanical Engineer	1	1,000	200	15,400
Marketing Specialist	1	1,000	200	15,400
Secretaries	2	500	100	14,900
Drivers	3	500	100	22,100
Security	2	350	70	10,430
General Services	2	350	70	10,430
Total Top Management Salaries				627,66
Production Facilities				
Processing Line Supervisor	3	500	100	22,100
Production Line Permanent Laborers	6	300	60	26,220
Health service	0.5	500	100	4,100
Health service assistance	0.5	500	100	4,100
Accountants	1	500	100	7,700
Quality control	2	500	100	14,900
Industrial safety	0.5	500	100	4,100
Purchasing	1	500	100	7,700
Information technology	1	500	100	7,700
Assistant	2	300	60	8,940
Total Production Management Salaries				107,56
Total Production Management Salaries				735,22

* Cost of direct labor included in the running cost

Company Org. Chart



In addition FCOGS includes the following items:

Project Initial Investment Cost

Cost Item	Area	Cost/Unit	Total cost	%
Land	1	100	1,000,000	5.19%
Admin. Buildings		250	250,000	1.30%
Production Facilities & Infrastructure		250	1,250,000	6.48%
Raw Material Storage Facilities		200	200,000	1.04%
Civil Works (Water, Drainage, etc.)		500,000	500,000	2.59%
Power Stations		250,000	250,000	1.30%
Production Lines Cost			15,186,130	78.78%
Office Supplies		90,000	90,000	0.47%
Transportation Units		500,000	500,000	2.59%
Pre-operating Cost			50,000	0.26%
Total Investment Cost			19,276,130	100%
Working Capital			6,130,708	
Hedging (5%)			1,270,342	
Total Production Facility Cost			**25,406,838**	

Production lines include fermentation

- **Gross Profit**: Gross Profit is calculated as total sales less total cost of goods sold.

- **Operating Expenses**: Operating expenses are grouped into Sales and Marketing, Research and Development, and General and Administrative categories. These categories represent all of the expenses involved in the day-to-day operations of a company other than what is included in the Cost of Goods Sold section described above.

  Sales and Marketing: This expense category includes all the costs associated with marketing and selling of the products. Salaries are increased by 30% to allocate the cost of employee benefits for sales and marketing personnel.

  Research and Development: This expense category includes all the costs associated with the research, development, prototyping and maintenance of the products.

  General and Administrative: This expense category includes all the costs associated with the general management and administration, including human relations and finance.

  Depreciation: One of your General and Administrative line items is allocated for depreciation expense. Straight-line depreciation is used for financial reporting. The price of the asset less its residual value if any (Residual, or salvage, value is the value an asset has after its assigned useful life has elapsed.) is divided evenly over the estimated useful life; that constant amount is then recorded as depreciation expense for each period during the useful life.

  The following table summarizes the expected operating expenses.

Variable Overhead Expenses

Cost Item	Cost LE
Sales & Marketing	
Advertising	10,000
Commissions	10,000
+ or - % of Sales	
Entertainment	5,000
Literature	10,000
Promotions	20,000
Salaries	10,000
Trade Shows	20,000
Travel	10,000
Total Sales & Marketing	**95,000**
Research & Development	
Consulting	10,000
Equipment (Expensed Purchases)	10,000
R & D Materials	8,000
R & D Salaries	8,000
Total Research & Development	**36,000**
General & Administrative	
Accounting	10,000
Admin Salaries	5,000
Bad Debts	3,000
Equipment Cost/Small Purchases	5,000
Insurance	10,000
Legal Fees	5,000
Licenses and Permits	10,000
Office Expenses	10,000
Office Cost	10,000
Taxes (non-Income Taxes)	0
Telephone	5,000
Utilities	10,000
Total General & Administrative	**83,000**
Grand Total	**214,000**

- **Income from Operations**: Income From Operations is calculated as total gross profit less your total operating expenses.

- **Other Income and Expenses**. This section of the budget includes non-operating costs of interest income and interest expense. These items relate to the financing of the project and not to the operations. Separating these costs makes it easier to evaluate the fundamental profitability of the project without regard to whether the company is financed with debt or equity or both.

- **Income Before Taxes**: Income Before Taxes is calculated as the total income from operations less total other income and expenses.

Income Statement: Profit & Loss (P & L) Statement, (Table F-3) summarizes project revenue and expense projections on monthly basis for one year at full capacity, or an annual basis for several years. It presents sales, cost of goods sold, gross profit, operating expenses (by category totals only, such as Sales and Marketing, General and Administrative, and Research and Development), income from operations, other income and expenses, income taxes, and net income.

Balance Sheet: The *Statement of Financial Position*, (table F-4) shows the financial position of the project at the end of each month at full capacity. It shows sales revenue and related expenses resulting in net income (or loss), which then becomes the increase (or decrease) in equity in balance sheet. The balance sheet in Table (F-4) is divided into two parts: (Assets = Liabilities + Equity) where Assets are those items the company owns. Assets are grouped into Current Assets, Fixed Assets, and Other Assets categories.

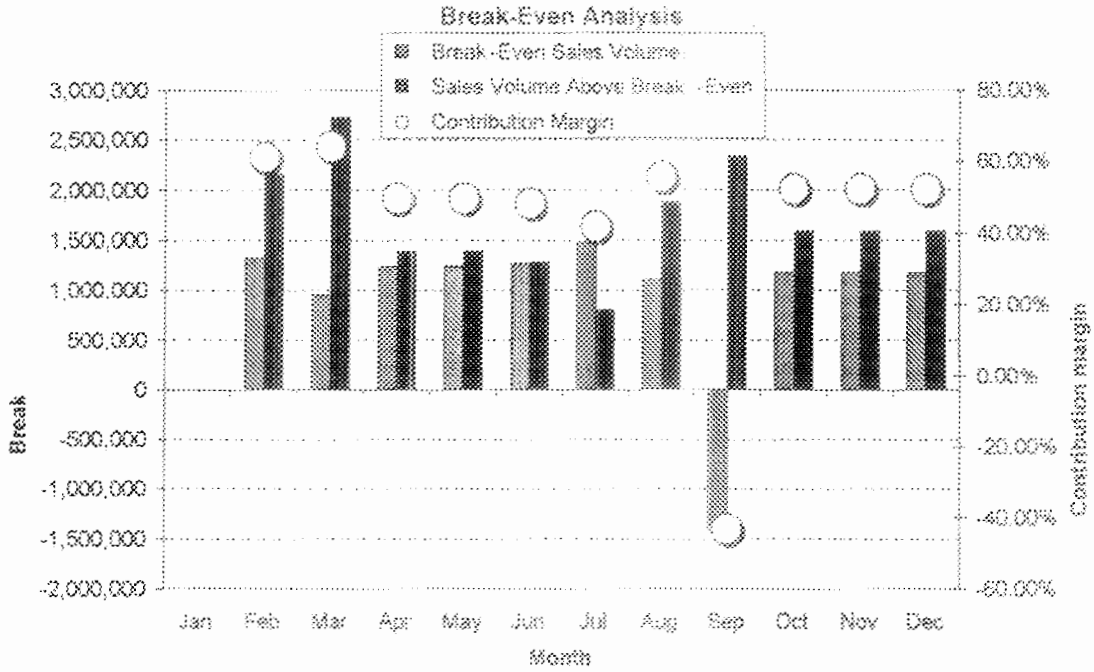
Current Assets: Including investments; accounts receivable and notes receivable, inventory (including raw materials, work in process and finished goods), and other current assets. Other current assets include prepaid expenses, such as insurance premiums or advertising costs

Fixed Assets: Plant and Equipment including equipment, automobiles, furniture and fixtures, land, and buildings. They are listed at cost on the balance sheet and are depreciated over a period of years. Depreciation is recorded as an expense in the budget to an account called accumulated depreciation

Current Liabilities: These include accounts payable to suppliers for materials, supplies, etc., other payables for items like payroll taxes or sales taxes, and accrued liabilities

Cash Flows Statement: Statement of Changes in Financial Position, Table (F-5), summarizes your cash related activities on a monthly basis for one year at full capacity.

Break-Even Analysis Statement: The Break-Even Analysis statement, table (F-7) predicting the effect of changes in costs and sales levels on the profitability of the project. This statement represents an internal tool to test the sensitivity of sales projections and the effects of management decisions regarding expenditures. Contribution Margin, Break-Even Sales Volume and Sales Volume Above Break-Even for each month at full capacity are calculated.



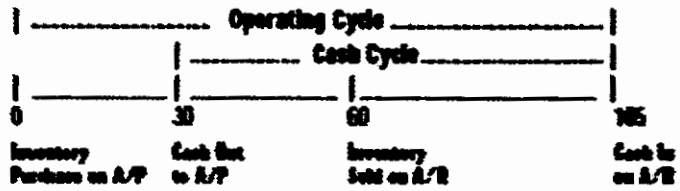
Ratio Analysis Statement: The Ratio Analysis statement, Table (F-6) presents financial ratios, which are comparisons of significant values from other financial statements. The common ratios are calculated including Current Ratio, Return on Total Assets, and Total Debt to Owners' Equity.

Table (F-6) clearly indicates that the Current ratio is expected to be around 1.7. Although a satisfactory value for a current ratio varies from industry to industry, a general rule of thumb is that a current ratio of 2 to 1 or greater is fairly healthy. Thinking in terms of money, a 2 to 1 ratio means that project have LE2 of current assets from which to pay every LE1 of current bills.

For Quick ratio, the project should try to maintain a quick ratio of 1 to 1, which means project LE1 worth of cash and accounts receivable for every LE1 dollar of total current liabilities. Table (F-6) indicates that the project has a Quick ratio of about 1.6 on average.

Operating Cycle and Cash Cycle

In the above analysis we assume that the operating cycle begins with the purchase of raw materials or inventory assuming this inventory is purchased on an open account payable (A/P) paid out for the A/P 30 days after the purchase is made and inventory is sold on A/R 60 days after it was purchased. This inventory is assumed to be sold on an account receivable (A/R) basis, and the actual cash is not collected until 45 days later as indicated in the following graph.


Operating Cycle
Cash Cycle
0
30
60
105
Inventory
Purchase on A/P
Cash flow
to A/P
Inventory
Sold on A/R
Cash in
on A/R

Summary Results

Profitability and Cash Flow

Forecasts of Profit & Loss and Cash Flow are indicated. The P&L is in a standard format with the exception that it does not estimate stock levels. The Cost of Goods Sold is therefore not in the usual format for a processing business.

The P&L projections suggest that the processing plant is highly profitable. The model suggests a gross margin level of 56% and a net profit after tax level of 38% at the end of the 10-year period of operation.

The Cash Flow projections contain some important assumptions. One is that the income from sales will be received a full 6 months after production. That has a dramatic effect on the operating cash flow, but is considered realistic for the production.

Operating, administration and interest costs are assumed to be paid promptly. Some benefit to the processing operation would accrue if payments, e.g. for raw material purchases, were delayed. That would reduce both the working capital and total funding requirement of project.

Funding Assumptions

The non-operating cash flow incorporates assumptions regarding capital expenditure and the likely level of debt funding which the business may be able to attract for various assets. Financial model shows that various levels of debt funding are anticipated for different asset classes. The proportions are based on general lending policies of the banks for industries and assets of this type, for properly secured loans. The model assumes that banks may lend up to 60% of the value of land, 50% of buildings and 33% of the cost of plant and equipment. In addition, it is assumed that 100% of office equipment and vehicles can be financed, e.g. by leases.

As a matter of fact, considerable variations must be expected in the amount of secured debt that can be raised for operations of this type. The model assumes a stand-alone business for which no other security is available. Considerably higher debt levels might be raised if owners can provide additional security, outside the business assets.

Results of the Model

Cash flow results have been used to provide two measures of the financial viability of the business. The amount of equity capital required is the minimum negative cumulative cash flow from the model. It represents the maximum amount of equity capital to be provided to avoid a negative cash balance. In the model as presented, that figure is $5.554 million and occurs in Year 5.

The "return on investment" is calculated as the internal rate of return on the net cash flows of the operation over 15 years (which takes account of the 12 month period

assumed for receipt of sales income). The internal rate of return is only **one measure** of "return on investment". It is used here to provide a convenient measure of the effect of changes in key variables on the overall return of the project over an extended period. The IRR determined for the base case in the model is 52% per annum. That is, by any measure, a very acceptable return for a long-term, high risk business such as this.

Risk Analysis

The primary purpose of developing the model is to determine how the financial viability of the project is affected by changes in key factors such as raw material and other cost items.

The two most important variables, which will affect the viability of regional processing plants, are the cost of the raw material and the price of products. The effect of changes in both factors is set out in the following tables.

Conclusion

A detailed financial model for the project has been developed. It suggests that the project is likely to require equity capital of more than $5 million over a two-year period, together with appropriate loan funding. Returns on investment of the order of 50% pa may be achieved, depending on raw material cost, product prices and many other processing variables. Returns on investment appear to be commensurate with the high level of risks involved in this emerging industry

Based on the above financial projections, we believe that this venture represents a sound business investment.

Project Initial Investment Cost

Cost Item	Area M^2	Cost/Unit LE	Total cost LE	%
Land	10,000	100	1,000,000	5.19%
Admin. Buildings	1,000	250	250,000	1.30%
Production Facilities & Infrastructure	5,000	250	1,250,000	6.48%
Raw Material Storage Facilities	1,000	200	200,000	1.04%
Civil Works (Water, Drainage, etc.)		500,000	500,000	2.59%
Power Stations		250,000	250,000	1.30%
Production Lines Cost			15,186,130	78.78%
Office Supplies		90,000	90,000	0.47%
Transportation Units		500,000	500,000	2.59%
Pre-operating Cost			50,000	0.26%
Total Investment Cost			19,276,130	100%
Working Capital			8,130,708	
Hedging (5%)			1,270,342	
Total Production Facility Cost			**25,406,838**	

Production lines include fermentation tanks

Annualized Capital Investments (Depreciation)

Item	Life (Years)	Total Investment Cost (LE)	Annualized Investment Cost (Depreciation) in LE
Buildings	30	2,450,000	81,667
Machines & Equipment	20	3,951,329	197,566
Machines & Equipment	15	4,712,236	314,149
Machines & Equipment	12	1,326,000	110,500
Machines & Equipment	10	1,235,000	123,500
Machines & Equipment	8	232,564	29,071
Transportation Units	10	500,000	50,000
Office Supplies	5	90,000	18,000
Total Annual Depreciation		15,421,583	924,453

Financial Plan

Item	LE	%	Source of Finance
Borrowed Money	12,703,419	50.00	Commercial Banks
Self Finance ()	12,703,419	50.00	Dividends
Total Finance	**25,406,838**	100.00	

Borrowed Money Islamic Bank or Local Commercial Bank

Interest Rate % 14

Grace Period 2 Years

Loan repay (USAID CIP)=LE **12,703,419**

Year	Installments	Interest	Total
1	0	0	0
2	0	0	0
3	1,587,927	1,778,479	3,366,406
4	1,587,927	1,556,169	3,144,096
5	1,587,927	1,333,859	2,921,786
6	1,587,927	1,111,549	2,699,477
7	1,587,927	889,239	2,477,167
8	1,587,927	666,929	2,254,857
9	1,587,927	444,620	2,032,547
10	1,587,927	222,310	1,810,237
11	0	0	0

Expected Annual Returns at Full Capacity

Product	Year One					Year Two				
	Sales Strategy*			Volume	Annual Total Factory Gate Value	Sales Strategy*			Volume	Factory Gate Value
	Primary Market	Secondary Markets	Local Market	Ton	LE	Primary Market	Secondary Markets	Local Market	Ton	LE
Preserved Olives	531.25	318.75	212.50	1,063	4,250,000	850.00	510.00	340.00	1,700	6,800,000
Marinated Vegetables										
Lemon	52.08	31.25	20.83	104	312,500	83.33	50.00	33.33	167	500,000
Cucumber	31.25	31.25	41.67	104	416,667	83.33	50.00	33.33	167	666,667
Tomatoes	62.50	37.50	25.00	125	437,500	100.00	60.00	40.00	200	700,000
Grape Leaves	25.00	25.00	33.33	83	333,333	66.67	40.00	26.67	133	533,333
Onions	83.33	50.00	33.33	167	416,667	133.33	80.00	53.33	267	666,667
Garlic	83.33	50.00	33.33	167	500,000	133.33	80.00	53.33	267	800,000
Mushrooms	58.33	25.00	0.00	83	416,667	66.67	40.00	26.67	133	666,667
Cauliflower	62.50	37.50	25.00	125	375,000	100.00	60.00	40.00	200	600,000
Mixed Vegetables	72.92	43.75	29.17	146	583,333	116.67	70.00	46.67	233	933,333
Mangoes	20.83	12.50	8.33	42	250,000	33.33	20.00	13.33	67	400,000
Artichokes	58.33	25.00	0.00	83	583,333	66.67	40.00	26.67	133	933,333
Asparagus	29.17	12.50	0.00	42	416,667	33.33	20.00	13.33	67	666,667
Pepper	31.25	18.75	12.50	63	500,000	50.00	30.00	20.00	100	800,000
Total Annual Return					9,791,667					15,666,667

Exchange Rate (1 US$= 6.50 LE) 6.50 LE)

* All prices are calculated on *Factory Gate* prices basis

* Primary market is USA

Secondary Markets are Local Market, E.U. and GCC countries

Expected Annual Returns at Full Capacity

Product	Year Three					Year Four				
	Sales Strategy*			Volume	Gate Value	Sales Strategy*			Volume	Factory Gate
	Primary Market	Secondary Markets	Local Market	Ton	LE	Primary Market	Secondary Markets	Local Market	Ton	LE
Preserved Olives	1,168.75	701.25	467.50	**2,338**	9,350,000	1,487.50	892.50	595.00	**2,975**	11,900,000
Marinated Vegetables										
Lemon	114.58	68.75	45.83	**229**	687,500	145.83	87.50	58.33	**292**	875,000
Cucumber	68.75	68.75	91.67	**229**	916,667	145.83	87.50	58.33	**292**	1,166,667
Tomatoes	137.50	82.50	55.00	**275**	962,500	175.00	105.00	70.00	**350**	1,225,000
Grape Leaves	55.00	55.00	73.33	**183**	733,333	116.67	70.00	46.67	**233**	933,333
Onions	183.33	110.00	73.33	**367**	916,667	233.33	140.00	93.33	**467**	1,166,667
Garlic	183.33	110.00	73.33	**367**	1,100,000	233.33	140.00	93.33	**467**	1,400,000
Mushrooms	128.33	55.00	0.00	**183**	916,667	116.67	70.00	46.67	**233**	1,166,667
Cauliflower	137.50	82.50	55.00	**275**	825,000	175.00	105.00	70.00	**350**	1,050,000
Mixed Vegetables	160.42	96.25	64.17	**321**	1,283,333	204.17	122.50	81.67	**408**	1,633,333
Mangoes	45.83	27.50	18.33	**92**	550,000	58.33	35.00	23.33	**117**	700,000
Artichokes	128.33	55.00	0.00	**183**	1,283,333	116.67	70.00	46.67	**233**	1,633,333
Asparagus	64.17	27.50	0.00	**92**	916,667	58.33	35.00	23.33	**117**	1,166,667
Pepper	68.75	41.25	27.50	**138**	1,100,000	87.50	52.50	35.00	**175**	1,400,000
Total Annual Return					21,541,667					27,416,667

Exchange rate (1 US$= 6.50 LE) 6.50 LE)

* All prices are calculated on ***Factory Gate*** prices basis

* Primary Market is USA

Secondary Markets are Local Market, EU, and GCC countries

Expected Annual Returns at Full Capacity

Product	Year Five					Year Six				
	Sales Strategy*			Volume	Gate Value	Sales Strategy*			Volume	Factory Gate
	Primary Market	Secondary Markets	Local Market	Ton	LE	Primary Market	Secondary Markets	Local Market	Ton	LE
Preserved Olives	1,806.25	1,063.75	722.50	**3,613**	14,450,000	1,806.25	1,063.75	722.50	**3,613**	14,450,000
Marinated Vegetables										
Lemon	177.08	106.25	70.83	**354**	1,062,500	177.08	106.25	70.83	**354**	1,062,500
Cucumber	106.25	106.25	141.67	**354**	1,416,667	177.08	106.25	70.83	**354**	1,416,667
Tomatoes	212.50	127.50	85.00	**425**	1,487,500	212.50	127.50	85.00	**425**	1,487,500
Grape Leaves	85.00	85.00	113.33	**283**	1,133,333	141.67	85.00	56.67	**283**	1,133,333
Onions	283.33	170.00	113.33	**567**	1,416,667	283.33	170.00	113.33	**567**	1,416,667
Garlic	283.33	170.00	113.33	**567**	1,700,000	283.33	170.00	113.33	**567**	1,700,000
Mushrooms	198.33	85.00	0.00	**283**	1,416,667	141.67	85.00	56.67	**283**	1,416,667
Cauliflower	212.50	127.50	85.00	**425**	1,275,000	212.50	127.50	85.00	**425**	1,275,000
Mixed Vegetables	247.92	148.75	99.17	**496**	1,983,333	247.92	148.75	99.17	**496**	1,983,333
Mangoes	70.83	42.50	28.33	**142**	850,000	70.83	42.50	28.33	**142**	850,000
Artichokes	198.33	85.00	0.00	**283**	1,983,333	141.67	85.00	56.67	**283**	1,983,333
Asparagus	99.17	42.50	0.00	**142**	1,416,667	70.83	42.50	28.33	**142**	1,416,667
Pepper	106.25	63.75	42.50	**213**	1,700,000	106.25	63.75	42.50	**213**	1,700,000
Total Annual Return					33,291,667					33,291,667

Exchange rate (1 US$= 6.50 LE) 6.50 LE)

* All prices are calculated on *Factory Gate* prices basis

* Primary Market is USA

Secondary Markets are Local Market, EU, and DCC countries

Seasonal Production Plan & Running Cost

Seasonal Utilization of Producing Capacity (Percentage)

Product	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG***	SEP	OCT	NOV	DEC
Preserved Olives	80%	70%	0%	0%	0%	0%	0%	0%	90%	90%	90%	90%
Marinated Vegetables												
Lemon	0%	0%	0%	0%	0%	0%	0%	10%	10%	10%	10%	10%
Cucumber	0%	0%	30%	20%	0%	0%	0%	0%	0%	0%	0%	0%
Tomatoes	0%	0%	20%	0%	20%	20%	0%	0%	0%	0%	0%	0%
Grape Leaves	0%	0%	0%	0%	0%	0%	20%	20%	0%	0%	0%	0%
Onions	0%	0%	20%	20%	20%	20%	0%	0%	0%	0%	0%	0%
Garlic	0%	0%	20%	20%	20%	20%	0%	0%	0%	0%	0%	0%
Mushrooms	0%	0%	0%	20%	20%	0%	0%	0%	0%	0%	0%	0%
Cauliflower	0%	0%	0%	0%	0%	20%	40%	0%	0%	0%	0%	0%
Mixed Vegetables	0%	0%	0%	20%	20%	20%	0%	10%	0%	0%	0%	0%
Mangoes	0%	0%	0%	0%	0%	0%	10%	10%	0%	0%	0%	0%
Artichokes	10%	20%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Asparagus	10%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Pepper	0%	0%	0%	0%	0%	0%	30%	0%	0%	0%	0%	0%
Total	100%	100%	100%	100%	100%	100%	100%	50%	100%	100%	100%	100%

* Calculated according to seasonal availability (and farm gate prices) of raw materials in Egypt

** Insure full utilization of production capacity

*** Annual Maintenance

Seasonal Requirements of the Raw Material (year one)

Product	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Preserved Olives	167	146	0	0	0	0	0	0	188	188	188	188	1063
Marinated Vegetables	0	0	0	0	0	0	0	0	0	0	0	0	0
Lemon	0	0	0	0	0	0	0	21	21	21	21	21	104
Cucumber	0	0	83	42	0	0	0	0	0	0	0	0	104
Tomatoes	0	0	42	0	42	42	0	0	0	0	0	0	125
Grape Leaves	0	0	0	0	0	0	42	42	0	0	0	0	83
Onions	0	0	42	42	42	42	0	0	0	0	0	0	167
Garlic	0	0	42	42	42	42	0	0	0	0	0	0	167
Mushrooms	0	0	0	42	42	0	0	0	0	0	0	0	83
Cauliflower	0	0	0	0	0	42	83	0	0	0	0	0	125
Mixed Vegetables	0	0	0	42	42	42	0	21	0	0	0	0	146
Mangoes	0	0	0	0	0	0	21	21	0	0	0	0	42
Artichokes	21	42	21	0	0	0	0	0	0	0	0	0	83
Asparagus	21	21	0	0	0	0	0	0	0	0	0	0	42
Pepper	0	0	0	0	0	0	63	0	0	0	0	0	63
Total	208	208	208	208	208	208	208	104	208	208	208	208	2396

Seasonal Requirements of the Raw Material (year two)

Product	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Preserved Olives	267	233	0	0	0	0	0	0	300	300	300	300	1,700
Marinated Vegetables	0	0	0	0	0	0	0	0	0	0	0	0	0
Lemon	0	0	0	0	0	0	0	33	33	33	33	33	167
Cucumber	0	0	100	67	0	0	0	0	0	0	0	0	167
Tomatoes	0	0	67	0	67	67	0	0	0	0	0	0	200
Grape Leaves	0	0	0	0	0	0	67	67	0	0	0	0	133
Onions	0	0	67	67	67	67	0	0	0	0	0	0	267
Garlic	0	0	67	67	67	67	0	0	0	0	0	0	267
Mushrooms	0	0	0	67	67	0	0	0	0	0	0	0	133
Cauliflower	0	0	0	0	0	67	133	0	0	0	0	0	200
Mixed Vegetables	0	0	0	67	67	67	0	33	0	0	0	0	233
Mangoes	0	0	0	0	0	0	33	33	0	0	0	0	67
Artichokes	33	67	33	0	0	0	0	0	0	0	0	0	133
Asparagus	33	33	0	0	0	0	0	0	0	0	0	0	67
Pepper	0	0	0	0	0	0	100	0	0	0	0	0	100
Total	333	333	333	333	333	333	333	167	333	333	333	333	3,833

Seasonal Requirements of the Raw Material (year three)

Product	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Preserved Olives	367	321	0	0	0	0	0	0	413	413	413	413	2,338
Marinated Vegetables	0	0	0	0	0	0	0	0	0	0	0	0	0
Lemon	0	0	0	0	0	0	0	46	46	46	46	46	229
Cucumber	0	0	138	92	0	0	0	0	0	0	0	0	229
Tomatoes	0	0	92	0	92	92	0	0	0	0	0	0	275
Grape Leaves	0	0	0	0	0	0	92	92	0	0	0	0	183
Onions	0	0	92	92	92	92	0	0	0	0	0	0	367
Garlic	0	0	92	92	92	92	0	0	0	0	0	0	367
Mushrooms	0	0	0	92	92	0	0	0	0	0	0	0	183
Cauliflower	0	0	0	0	0	92	183	0	0	0	0	0	275
Mixed Vegetables	0	0	0	92	92	92	0	46	0	0	0	0	321
Mangoes	0	0	0	0	0	0	46	46	0	0	0	0	92
Artichokes	46	92	46	0	0	0	0	0	0	0	0	0	183
Asparagus	46	46	0	0	0	0	0	0	0	0	0	0	92
Pepper	0	0	0	0	0	0	138	0	0	0	0	0	138
Total	458	458	458	458	458	458	458	229	458	458	458	458	5,271

Seasonal Requirements of the Raw Material (year four)

Product	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Preserved Olives	467	408	0	0	0	0	0	0	525	525	525	525	2975
Marinated Vegetables	0	0	0	0	0	0	0	0	0	0	0	0	0
Lemon	0	0	0	0	0	0	0	58	58	58	58	58	292
Cucumber	0	0	175	117	0	0	0	0	0	0	0	0	292
Tomatoes	0	0	117	0	117	117	0	0	0	0	0	0	350
Grape Leaves	0	0	0	0	0	0	117	117	0	0	0	0	233
Onions	0	0	117	117	117	117	0	0	0	0	0	0	467
Garlic	0	0	117	117	117	117	0	0	0	0	0	0	467
Mushrooms	0	0	0	117	117	0	0	0	0	0	0	0	233
Cauliflower	0	0	0	0	0	117	233	0	0	0	0	0	350
Mixed Vegetables	0	0	0	117	117	117	0	58	0	0	0	0	408
Mangoes	0	0	0	0	0	0	58	58	0	0	0	0	117
Artichokes	58	117	58	0	0	0	0	0	0	0	0	0	233
Asparagus	58	58	0	0	0	0	0	0	0	0	0	0	117
Pepper	0	0	0	0	0	0	175	0	0	0	0	0	175
Total	583	583	583	583	583	583	583	292	583	583	583	583	6708

Seasonal Requirements of the Raw Material (year five)

Product	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Preserved Olives	567	496	0	0	0	0	0	0	638	638	638	638	3613
Marinated Vegetables													
Lemon	0	0	0	0	0	0	0	71	71	71	71	71	354
Cucumber	0	0	213	142	0	0	0	0	0	0	0	0	354
Tomatoes	0	0	142	0	142	142	0	0	0	0	0	0	425
Grape Leaves	0	0	0	0	0	0	142	142	0	0	0	0	283
Onions	0	0	142	142	142	142	0	0	0	0	0	0	567
Garlic	0	0	142	142	142	142	0	0	0	0	0	0	567
Mushrooms	0	0	0	142	142	0	0	0	0	0	0	0	283
Cauliflower	0	0	0	0	0	142	283	0	0	0	0	0	425
Mixed Vegetables	0	0	0	142	142	142	0	71	0	0	0	0	496
Mangoes	0	0	0	0	0	0	71	71	0	0	0	0	142
Artichokes	71	142	71	0	0	0	0	0	0	0	0	0	283
Asparagus	71	71	0	0	0	0	0	0	0	0	0	0	142
Pepper	0	0	0	0	0	0	213	0	0	0	0	0	213
Total	708	708	708	708	708	708	708	354	708	708	708	708	8146

Average Raw Material Prices (Factory Gate)

Product	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Preserved Olives	500	500	0	0	0	0	0	0	500	500	500	500
Marinated Vegetables												
Lemon	0	0	0	0	0	0	0	200	200	200	200	200
Cucumber	0	0	500	300	0	0	0	0	0	0	0	0
Tomatoes	0	0	250	0	200	200	0	0	0	0	0	0
Grape Leaves	0	0	0	0	0	0	200	200	0	0	0	0
Onions	0	0	150	150	150	150	0	0	0	0	0	0
Garlic	0	0	200	200	200	200	0	0	0	0	0	0
Mushrooms	0	0	0	300	300	0	0	0	0	0	0	0
Cauliflower	0	0	0	0	0	250	250	0	0	0	0	0
Mixed Vegetables	0	0	0	300	300	300	0	300	0	0	0	0
Mangoes	0	0	0	0	0	0	300	300	0	0	0	0
Artichokes	500	400	300	0	0	0	0	0	0	0	0	0
Asparagus	600	600	0	0	0	0	0	0	0	0	0	0
Pepper	0	0	0	0	0	0	500	0	0	0	0	0

Recurrent Inputs (Year One)

Cost Item (LE)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Raw Material (LE)	106,250	102,083	52,083	52,083	39,583	37,500	58,333	16,667	97,917	97,917	97,917	97,917	856,250
Packaging Materials* (LE)	75,652	75,652	75,652	75,652	75,652	75,652	75,652	37,826	75,652	75,652	75,652	75,652	870,000
Filling Materials (LE)	113,478	113,478	113,478	113,478	113,478	113,478	113,478	56,739	113,478	113,478	113,478	113,478	1,305,000
Direct labor (LE)	10,625	10,208	5,208	5,208	3,958	3,750	5,833	1,667	9,792	9,792	9,792	9,792	85,625
Power Consumption (LE)	11,688	11,229	5,729	5,729	4,354	4,125	6,417	1,833	10,771	10,771	10,771	10,771	94,188
Water Consumption (LE)	5,313	5,104	2,604	2,604	1,979	1,875	2,917	833	4,896	4,896	4,896	4,896	42,813
Sales & Marketing (LE)	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	95,000
Research & Development (L	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	36,000
General & Administrative (L	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	83,000
Admin. Salaries (LE)	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	735,220
Maintenance (LE)	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	963,806
Insurance (LE)	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	963,806
Other (LE)													
Total (LE)	562,742	557,492	494,492	494,492	478,742	476,117	502,367	355,301	552,242	552,242	552,242	552,242	6,130,708

Recurrent Inputs (Year Two)

Cost Item	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Raw Material	170,000	163,333	83,333	83,333	63,333	60,000	93,333	26,667	156,667	156,667	156,667	156,667	1,370,000
Packaging Materials*	121,043	121,043	121,043	121,043	121,043	121,043	121,043	60,522	121,043	121,043	121,043	121,043	1,392,000
Filling Materials	181,565	181,565	181,565	181,565	181,565	181,565	181,565	90,783	181,565	181,565	181,565	181,565	2,088,000
Direct labor	17,000	16,333	8,333	8,333	6,333	6,000	9,333	2,667	15,667	15,667	15,667	15,667	137,000
Power Consumption	18,700	17,967	9,167	9,167	6,967	6,600	10,267	2,933	17,233	17,233	17,233	17,233	150,700
Water Consumption	8,500	8,167	4,167	4,167	3,167	3,000	4,667	1,333	7,833	7,833	7,833	7,833	68,500
Sales & Marketing	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	95,000
Research & Development	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	36,000
General & Administrative	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	83,000
Admin. Salaries	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	735,220
Maintenance	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	963,806
Insurance	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	963,806
Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	756,545	748,145	647,345	647,345	622,145	617,945	659,945	424,640	739,745	739,745	739,745	739,745	8,063,033

Recurrent Inputs (Year Three)

Cost Item	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Raw Material	233,750	224,583	114,583	114,583	87,083	82,500	128,333	36,667	215,417	215,417	215,417	215,417	1,883,750
Packaging Materials*	166,435	166,435	166,435	166,435	166,435	166,435	166,435	83,217	166,435	166,435	166,435	166,435	1,914,000
Filling Materials	249,652	249,652	249,652	249,652	249,652	249,652	249,652	124,826	249,652	249,652	249,652	249,652	2,871,000
Direct labor	23,375	22,458	11,458	11,458	8,708	8,250	12,833	3,667	21,542	21,542	21,542	21,542	188,375
Power Consumption	25,713	24,704	12,604	12,604	9,579	9,075	14,117	4,033	23,696	23,696	23,696	23,696	207,213
Water Consumption	11,688	11,229	5,729	5,729	4,354	4,125	6,417	1,833	10,771	10,771	10,771	10,771	94,188
Sales & Marketing	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	95,000
Research & Development	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	36,000
General & Administrative	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	83,000
Admin. Salaries	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	735,220
Maintenance	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	963,806
Insurance	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	963,806
Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	756,545	748,145	647,345	647,345	622,145	617,945	659,945	424,640	739,745	739,745	739,745	739,745	8,083,033

Recurrent Inputs (Year Four)

Cost Item	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Raw Material	297,500	285,833	145,833	145,833	110,833	105,000	163,333	46,667	274,167	274,167	274,167	274,167	2,397,500
Packaging Materials*	211,826	211,826	211,826	211,826	211,826	211,826	211,826	105,913	211,826	211,826	211,826	211,826	2,436,000
Filling Materials	317,739	317,739	317,739	317,739	317,739	317,739	317,739	158,870	317,739	317,739	317,739	317,739	3,654,000
Direct labor	29,750	28,583	14,583	14,583	11,083	10,500	16,333	4,667	27,417	27,417	27,417	27,417	239,750
Power Consumption	32,725	31,442	16,042	16,042	12,192	11,550	17,967	5,133	30,158	30,158	30,158	30,158	263,725
Water Consumption	14,875	14,292	7,292	7,292	5,542	5,250	8,167	2,333	13,708	13,708	13,708	13,708	119,875
Sales & Marketing	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	95,000
Research & Development	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	36,000
General & Administrative	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	83,000
Admin. Salaries	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	735,220
Maintenance	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	963,806
Insurance	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	963,806
Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1,144,151	1,129,451	953,051	953,051	908,951	901,601	975,101	563,319	1,114,751	1,114,751	1,114,751	1,114,751	11,987,683

Recurrent Inputs (Year Five)

Cost Item	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Raw Material	361,250	347,083	177,083	177,083	134,583	127,500	198,333	56,667	332,917	332,917	332,917	332,917	2,911,250
Packaging Materials*	257,217	257,217	257,217	257,217	257,217	257,217	257,217	128,609	257,217	257,217	257,217	257,217	2,958,000
Filling Materials	385,826	385,826	385,826	385,826	385,826	385,826	385,826	192,913	385,826	385,826	385,826	385,826	4,437,000
Direct labor	36,125	34,708	17,708	17,708	13,458	12,750	19,833	5,667	33,292	33,292	33,292	33,292	291,125
Power Consumption	39,738	38,179	19,479	19,479	14,804	14,025	21,817	6,233	36,621	36,621	36,621	36,621	320,238
Water Consumption	16,063	17,354	8,854	8,854	6,729	6,375	9,917	2,833	16,646	16,646	16,646	16,646	145,563
Sales & Marketing	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	95,000
Research & Development	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	36,000
General & Administrative	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	83,000
Admin. Salaries	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	735,220
Maintenance	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	963,806
Insurance	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	963,806
Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1,337,955	1,320,105	1,105,905	1,105,905	1,052,355	1,043,430	1,132,680	632,658	1,302,255	1,302,255	1,302,255	1,302,255	13,940,008

Recurrent Inputs (Year Six)

Cost Item	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Raw Material	361,250	347,083	177,083	177,083	134,583	127,500	198,333	56,667	332,917	332,917	332,917	332,917	2,911,250
Packaging Materials*	257,217	257,217	257,217	257,217	257,217	257,217	257,217	128,609	257,217	257,217	257,217	257,217	2,958,000
Filling Materials	385,826	385,826	385,826	385,826	385,826	385,826	385,826	192,913	385,826	385,826	385,826	385,826	4,437,000
Direct labor	36,125	34,708	17,708	17,708	13,458	12,750	19,833	5,667	33,292	33,292	33,292	33,292	291,125
Power Consumption	39,738	38,179	19,479	19,479	14,804	14,025	21,817	6,233	36,621	36,621	36,621	36,621	320,238
Water Consumption	16,063	17,354	8,854	8,854	6,729	6,375	9,917	2,833	16,646	16,646	16,646	16,646	145,563
Sales & Marketing	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	7,917	95,000
Research & Development	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	36,000
General & Administrative	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	6,917	83,000
Admin. Salaries	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	61,268	735,220
Maintenance	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	963,806
Insurance	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	80,317	963,806
Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1,337,955	1,320,105	1,105,905	1,105,905	1,052,355	1,043,430	1,132,680	632,658	1,302,255	1,302,255	1,302,255	1,302,255	13,940,008

Recurrent Inputs by Product (at full capacity)

Cost item	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Preserved Olives													
Raw Material	283,333	247,917	0	0	0	0	0	0	318,750	318,750	318,750	318,750	1,806,250
Other	781,364	681,115	0	0	0	0	0	0	872,404	872,404	872,404	872,404	4,952,095
Lemon													
Raw Material	0	0	0	0	0	0	0	14,167	14,167	14,167	14,167	14,167	70,833
Other	0	0	0	0	0	0	0	115,198	96,934	96,934	96,934	96,934	502,933
Cucumber & Tomato													
Raw Material	0	0	141,667	42,500	28,333	28,333	0	0	0	0	0	0	240,833
Other	0	0	464,411	185,764	183,554	183,186	0	0	0	0	0	0	1,016,915
Onions & Garlic													
Raw Material	0	0	49,583	49,583	49,583	49,583	0	0	0	0	0	0	198,333
Other	0	0	371,528	371,528	367,108	366,372	0	0	0	0	0	0	1,476,537
Other Products													
Raw Material	77,917	99,167	21,250	85,000	85,000	77,917	198,333	42,500	0	0	0	0	687,083
Other	195,341	291,906	92,882	371,528	367,108	366,372	747,477	230,396	0	0	0	0	2,663,012
													13,614,826

Enterprise Table Olives & Marinated Vegetables

Investment Inputs

Assumed real interest rate: 0.10 pa

				Item Cost (LE)	Useful Life (yrs)	Annualised Cost (LE)	Confidence limits
Land				1,000,000	100	10,000	+/-20%
Admin. Buildings				250,000	30	8,333	+/-20%
Production Facilities & Infrastructure				1,250,000	30	41,667	+/-20%
Raw Material Storage Facilities				200,000	30	6,667	+/-20%
Civil Works (Water, Drainage, etc.)				500,000	30	16,667	+/-20%
Power Stations				250,000	20	12,500	+/-20%
Production Lines Cost				15,186,130	15	1,012,409	+/-20%
Office Supplies				90,000	5	18,000	+/-20%
Transportation Units				500,000	10	50,000	+/-20%
Pre-operating Cost				50,000	1	50,000	+/-20%
Permits, etc.		1	2,700	2,700	10	270	+/-20%
Other				0	1	0	+/-20%
Working capital	Years	1	1	6,130,708	0	6,130,708	+/-20%
TOTAL:				25,409,538		$7,357,220	

Total annualised investment cost per unit:

Item	%		Cost (LE)	
Preserved Olives		0.44	3,237,177	Per Year
Lemon		0.04	294,289	Per Year
Cucumber & Tomatoes		0.09	662,150	Per Year
Onions & Garlic		0.14	1,030,011	Per Year
Other Products		0.27	1,986,449	Per Year
Total		1	7,210,076	Per Year

Recurrent Inputs

	Units	Costs calculated per: Amount	Price/Unit	Annual Cost (LE)			Confidence limits
Raw Material		1	2,911,250	2,911,250			+/-25%
Packaging Materials*		1	2,958,000	2,958,000			+/-25%
Filling Materials		1	4,437,000	4,437,000			+/-25%
Direct labor		1	291,125	291,125			+/-25%
Power Consumption		1	320,238	320,238			+/-25%
Water Consumption		1	145,563	145,563			+/-25%
Sales & Marketing		1	95,000	95,000			+/-25%
Research & Development		1	36,000	36,000			+/-25%
General & Administrative		1	83,000	83,000			+/-25%
Admin. Salaries		1	735,220	735,220			+/-25%
Maintenance		1	963,806	963,806			+/-25%
Insurance		1	963,806	963,806			+/-25%
Other		1	0	0			+/-25%
TOTAL:				13,940,008	per	Year	

Yield Table Olive & Marinated Products

Demand/Revenues

Yields estimated per: Year
Prices estimated per: Ton

	Total Factory Gate LE	Income	Confidence limits
Preserved Olives	14,450,000	14,450,000	+/-20%
Preserved Vegetables			
Lemon	1,082,500	1,082,500	+/-20%
Cucumber & Tomatoes	2,904,167	2,904,167	+/-20%
Onions & Garlic	3,116,667	3,116,667	+/-20%
Other Products	10,625,000	10,625,000	+/-20%
TOTAL:		32,158,333	

Financial Static Analysis

FINANCIAL ANALYSIS RESULTS

Static Analysis:

For a typical year or season of production, once the enterprise has been established:

	Revenue (LE)	32,158,333	per	Year
Less	Recurrent Inputs	-13,940,008	per	Year
=	Gross Margin (LE)	18,218,325	per	Year
		= 1 return on recurrent inputs only		
Less	Investment Inc annualised	-7,210,076	per	Year
=	Net Margin (LE)	11,008,250	per	Year
		= 1 return on investment & recurrent inputs		

Sensitivity Analysis:

Gross Margin = 0 when:	Revenue (LE) is reduced by	57%
	Recurrent Inputs are increased by	131%
Net Margin = 0 when:	Revenue (LE) is reduced by	34%
	Recurrent Inputs are increased by	79%
	Investment Inputs is increased by	153%

Demand Sensitivity:	Y / N	Recommendation
Is there an established market for the product?	y	(Good - go to next question)
Is this market readily accessible?	y	(Good - go to next question)
Will the produce volume upset market stability?	n	(Good - go to next question)
Will the produce volume affect market price?	n	(Good - go to next question)
Is the market likely to strengthen with time?	y	(Good - robust solution)
Are new markets likely to emerge with time?	y	Investigate development of these markets

CASH FLOW ANALYSIS

for enterprise of 1 Year

	Total	Present Value @ 10%	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Investment Inputs													
Land	-1,000,000	-677,183	-1,000,000	0	0	0	0	0	0	0	0	0	0
Admin. Buildings	-250,000	-218,298	-250,000	0	0	0	0	0	0	0	0	0	0
Production Facilities & Infrastructure	-1,250,000	-1,098,491	-1,250,000	0	0	0	0	0	0	0	0	0	0
Raw Material Storage Facilities	-200,000	-175,439	-200,000	0	0	0	0	0	0	0	0	0	0
Civil Works (Water, Drainage, etc.)	-500,000	-438,598	-500,000	0	0	0	0	0	0	0	0	0	0
Power Stations	-250,000	-219,299	-250,000	0	0	0	0	0	0	0	0	0	0
Production Lines Cost	-15,186,130	-13,321,169	-15,186,130	0	0	0	0	0	0	0	0	0	0
Office Supplies	-90,000	-78,947	-90,000	0	0	0	0	0	0	0	0	0	0
Transportation Units	-500,000	-438,598	-500,000	0	0	0	0	0	0	0	0	0	0
Pre-operating Cost	-50,000	-43,860	-50,000	0	0	0	0	0	0	0	0	0	0
Permits, etc.	-2,700	-2,368	-2,700	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Working capital	-24,522,832	-10,693,488	-6,130,708	0	0	0	0	-6,130,708	0	0	0	-6,130,708	0
SUB-TOTAL:	-43,801,662	-27,694,747											
Recurrent Inputs													
Raw Material	-53,087,600	-15,295,301	-856,250	-1,370,000	-1,883,750	-2,397,500	-2,911,250	-2,911,250	-2,911,250	-2,911,250	-2,911,250	-2,911,250	-2,911,250
Packaging Materials*	-53,940,000	-15,540,919	-870,000	-1,392,000	-1,914,000	-2,436,000	-2,958,000	-2,958,000	-2,958,000	-2,958,000	-2,958,000	-2,958,000	-2,958,000
Filling Materials	-80,910,000	-23,311,378	-1,305,000	-2,088,000	-2,871,000	-3,654,000	-4,437,000	-4,437,000	-4,437,000	-4,437,000	-4,437,000	-4,437,000	-4,437,000
Direct labor	-5,308,750	-1,529,630	-85,625	-137,000	-188,375	-239,750	-291,125	-291,125	-291,125	-291,125	-291,125	-291,125	-291,125
Power Consumption	-5,838,625	-1,682,493	-94,188	-150,700	-207,213	-263,725	-320,238	-320,238	-320,238	-320,238	-320,238	-320,238	-320,238
Water Consumption	-2,654,375	-764,765	-42,813	-68,500	-94,188	-119,875	-145,563	-145,563	-145,563	-145,563	-145,563	-145,563	-145,563
Sales & Marketing	-1,900,000	-629,197	-95,000	-95,000	-95,000	-95,000	-95,000	-95,000	-95,000	-95,000	-95,000	-95,000	-95,000
Research & Development	-720,000	-238,433	-36,000	-36,000	-36,000	-36,000	-36,000	-36,000	-36,000	-36,000	-36,000	-36,000	-36,000
General & Administrative	-1,660,000	-549,720	-83,000	-83,000	-83,000	-83,000	-83,000	-83,000	-83,000	-83,000	-83,000	-83,000	-83,000
Admin. Salaries	-14,704,400	-4,869,458	-735,220	-735,220	-735,220	-735,220	-735,220	-735,220	-735,220	-735,220	-735,220	-735,220	-735,220
Maintenance	-19,276,130	-6,383,416	-963,806	-963,806	-963,806	-963,806	-963,806	-963,806	-963,806	-963,806	-963,806	-963,806	-963,806
Insurance	-19,276,130	-6,383,416	-963,806	-963,806	-963,806	-963,806	-963,806	-963,806	-963,806	-963,806	-963,806	-963,806	-963,806
Interest	-2,168,827	-600,823	0	0	0	0	-134,893	-134,893	-134,893	-134,893	-134,893	-134,893	-134,893
Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL:	-291,435,696	-77,676,699											
Revenue													
Table Olives	283,800,000	75,918,282	4,260,000	8,500,000	9,260,000	11,900,000	14,460,000	14,460,000	14,460,000	14,460,000	14,460,000	14,460,000	14,460,000
Marinated vegetables	343,893,258	98,891,485	5,541,667	8,888,667	12,191,667	16,516,667	18,841,667	18,841,667	18,841,667	18,841,667	18,841,667	18,841,667	18,841,667
SUB-TOTAL:	627,693,258	174,809,767											
Residual Values													
Land	81,000,000	972,762	-	-	-	-	-	-	-	-	-	-	-
Admin. Buildings	800,000	98,849	-	-	-	-	-	-	-	-	-	-	-
Production Facilities & Infrastructure	80	80	-	-	-	-	-	-	-	-	-	-	-
Raw Material Storage Facilities	80	80	-	-	-	-	-	-	-	-	-	-	-
Civil Works (Water, Drainage, etc.)	80	80	-	-	-	-	-	-	-	-	-	-	-
Power Stations	80	80	-	-	-	-	-	-	-	-	-	-	-
Production Lines Cost	80	80	-	-	-	-	-	-	-	-	-	-	-
Office Supplies	80	80	-	-	-	-	-	-	-	-	-	-	-
Transportation Units	80	80	-	-	-	-	-	-	-	-	-	-	-
Pre-operating Cost	80	80	-	-	-	-	-	-	-	-	-	-	-
Permits, etc.	80	80	-	-	-	-	-	-	-	-	-	-	-
Other	80	80	-	-	-	-	-	-	-	-	-	-	-
Working capital	80	80	-	-	-	-	-	-	-	-	-	-	-
SUB-TOTAL:	81,000,000	970,310											
NET CASH FLOW:	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

278

CASH FLOW ANALYSIS

for enterprise of

	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Investment Inputs									
Land	0	0	0	0	0	0	0	0	0
Admin. Buildings	0	0	0	0	0	0	0	0	0
Production Facilities & Infrastructure	0	0	0	0	0	0	0	0	0
Raw Material Storage Facilities	0	0	0	0	0	0	0	0	0
Civil Works (Water, Drainage, etc.)	0	0	0	0	0	0	0	0	0
Power Stations	0	0	0	0	0	0	0	0	0
Production Lines Cost	0	0	0	0	0	0	0	0	0
Office Supplies	0	0	0	0	0	0	0	0	0
Transportation Units	0	0	0	0	0	0	0	0	0
Pre-operating Cost	0	0	0	0	0	0	0	0	0
Permits, etc.	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0
Working capital	0	0	0	-6,130,708	0	0	0	0	0
SUB-TOTAL:									
Recurrent Inputs									
Raw Material	-2,911,250	-2,911,250	-2,911,250	-2,911,250	-2,911,250	-2,911,250	-2,911,250	-2,911,250	-2,911,250
Packaging Materials*	-2,958,000	-2,958,000	-2,958,000	-2,958,000	-2,958,000	-2,958,000	-2,958,000	-2,958,000	-2,958,000
Filling Materials	-4,437,000	-4,437,000	-4,437,000	-4,437,000	-4,437,000	-4,437,000	-4,437,000	-4,437,000	-4,437,000
Direct labor	-291,125	-291,125	-291,125	-291,125	-291,125	-291,125	-291,125	-291,125	-291,125
Power Consumption	-320,238	-320,238	-320,238	-320,238	-320,238	-320,238	-320,238	-320,238	-320,238
Water Consumption	-145,563	-145,563	-145,563	-145,563	-145,563	-145,563	-145,563	-145,563	-145,563
Sales & Marketing	-95,000	-95,000	-95,000	-95,000	-95,000	-95,000	-95,000	-95,000	-95,000
Research & Development	-36,000	-36,000	-36,000	-36,000	-36,000	-36,000	-36,000	-36,000	-36,000
General & Administrative	-83,000	-83,000	-83,000	-83,000	-83,000	-83,000	-83,000	-83,000	-83,000
Admin. Salaries	-735,220	-735,220	-735,220	-735,220	-735,220	-735,220	-735,220	-735,220	-735,220
Maintenance	-963,806	-963,806	-963,806	-963,806	-963,806	-963,806	-963,806	-963,806	-963,806
Insurance	-963,806	-963,806	-963,806	-963,806	-963,806	-963,806	-963,806	-963,806	-963,806
Interest	-134,933	-134,933	-134,933	-134,933	-134,933	-134,933	-134,933	-134,933	-134,933
Taxes	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0
TOTAL:									
Revenue									
Table Olives	14,450,000	14,450,000	14,450,000	14,450,000	14,450,000	14,450,000	14,450,000	14,450,000	14,450,000
Marinated vegetables	18,841,667	18,841,667	18,841,667	18,841,667	18,841,667	18,841,667	18,841,667	18,841,667	18,841,667
SUB-TOTAL:									
Residual Values									
Land	-	-	-	-	-	-	-	-	1,000,000
Admin. Buildings	-	-	-	-	-	-	-	-	90,000
Production Facilities & Infrastructure	-	-	-	-	-	-	-	-	-
Raw Material Storage Facilities	-	-	-	-	-	-	-	-	-
Civil Works (Water, Drainage, etc.)	-	-	-	-	-	-	-	-	-
Power Stations	-	-	-	-	-	-	-	-	-
Production Lines Cost	-	-	-	-	-	-	-	-	-
Office Supplies	-	-	-	-	-	-	-	-	-
Transportation Units	-	-	-	-	-	-	-	-	-
Pre-operating Cost	-	-	-	-	-	-	-	-	-
Permits, etc.	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Working capital	-	-	-	-	-	-	-	-	-
SUB-TOTAL:									
NET CASH FLOW:	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

FINANCIAL ANALYSIS RESULTS

Cash Flow Analysis:

Net Present Value @	14%	$69,716,791	Very Favourable Outcome
Internal Rate of Return		56.3%	Very Favourable Outcome
Benefit Cost Ratio @	14%	1.66	Very Favourable Outcome

Sensitivity Analysis:

Net Present Value with ....

> discount rate of	12% pa	$83,705,962	Not sensitive
> discount rate of	16% pa	$58,429,344	Not sensitive

Internal Rate of Return with ....

> yield / prices decreased by	30%	42.5%	Not sensitive
> investment expenditure increased by	10%	51.3%	Not sensitive
>recurrent inputs increased by	10%	52.0%	Not sensitive

Threshold Analysis:

Net Present Value equals ZERO with ....

> yield / prices decreased by	39.9%	Outcome not sensitive to yield / price assumptions
> investment expenditure increased by	252.6%	Outcome not sensitive to investment expenditure assumptions
>recurrent inputs increased by	69.7%	Outcome not sensitive to seasonal input assumptions

Breakeven Analysis:

The Enterprise breaks even on a cumulative discounted basis in Year 4

250

Cash Flow Analysis:

Net Present Value @
Internal Rate of Return
Benefit Cost Ratio @

Sensitivity Analysis:

Net Present Value with ....
> discount rate of
> discount rate of
Internal Rate of Return with ....
> yield / prices
> investment expenditure
>recurrent inputs

Threshold Analysis:

Net Present Value equals ZERO with

> inves

Breakeven Analysis:

The Enterprise breaks even on a cumulative disc

Summary of the Project: SAWA FOOD/RISCO

Description: Pickled & Fermented Products

Analysts: Douglas Anderson & Ali El-Saied

Date: April 2003

Key Assumptions:

Enterprise scale		8,000 Ton Raw Material (Full Capacity)
Geographic location		Belbees-Sharkya
Initial investment	LE	25,409,538
Typical recurrent input costs	LE	13,940,008
Key yield factors		Table Olives
		Marinated vegetables
Annual Average Gross Return (full Capa		
Table Olives	LE	14,450,000 Per Ton
Marinated Vegetables	LE	17,708,333 Per Ton
Discount rate		0
Inflation rate (if any)		5%
Analysis period		20 years

Present Value @ 10% over 20 years:

Investment inputs	LE	27,594,747 (includes working capital)
Recurrent inputs	LE	13,940,008
Revenues	LE	32,158,333
Residual values	LE	79,310
Net Present Value of Enterprise @ 14% over 20 years		69,715,791

Financial Analysis Results:

Return on recurrent inputs - Stage One	130.69% static state
Return on investment and recurrent inputs - Stage One	52.05% static state
Internal Rate of Return	56.32%
Benefit Cost Ratio @14%	1.66

Breakeven on cumulative discounted basis after 4 years

Threshold Analysis Results:

Net Present Value of Enterprise equals ZERO when.....

Yield / Prices	decreased by	40%
Investment Expenditure	increased by	253%
Recurrent Inputs	increased by	90%

Major Risks to Financial Viability:

Fluctuations in raw material prices

Relatively new to the market

Note: Production plan at full capacity

Product Type	%	Annual production (Ton)	Marketing Plan (Ton) USA	GCC	Local market
Preserved Olives	44%	3,613	1,806	1,084	723
Lemon	4%	354	177	106	71
Cucumber	4%	354	106	106	142
Tomatoes	5%	425	213	128	85
Grape Leaves	3%	283	85	85	113
Onions	7%	567	283	170	113
Garlic	7%	567	283	170	113
Mushrooms	3%	283	198	85	0
Cauliflower	5%	425	213	128	85
Mixed Vegetables	6%	496	248	149	99
Mangoes	2%	142	71	43	28
Artichokes	3%	283	198	85	0
Asparagus	2%	142	99	43	0
Pepper	3%	213	106	64	43

Table (F-1): GROSS PROFIT ANALYSIS BY PRODUCT (at full capacity by month) ***

	1/15	2/15	3/15	4/15	5/15	6/15	7/15	8/15	9/15	10/15	11/15	12/15	Year Total
Olives													
Sales	2,266,667	1,983,333	0	0	0	0	0	0	2,550,000	2,550,000	2,550,000	2,550,000	14,450,000
Raw Material	283,333	247,917	0	0	0	0	0	0	318,750	318,750	318,750	318,750	1,806,250
Other Recurrent Inputs	781,364	681,115	0	0	0	0	0	0	872,404	872,404	872,404	872,404	4,952,095
Fixed cost of Goods	269,765	269,765	269,765	269,765	269,765	269,765	269,765	269,765	269,765	269,765	269,765	269,765	3,237,177
Gross Profit	932,205	784,537	-269,765	-269,765	-269,765	-269,765	-269,765	-269,765	1,089,081	1,089,081	1,089,081	1,089,081	4,454,478
% of Sales	41.13%	39.56%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	42.71%	42.71%	42.71%	42.71%	30.83%
Lemons													
Sales	0	0	0	0	0	0	0	212,500	212,500	212,500	212,500	212,500	1,062,500
Material	0	0	0	0	0	0	0	14,167	14,167	14,167	14,167	14,167	70,833
Other Recurrent Inputs	0	0	0	0	0	0	0	115,198	96,934	96,934	96,934	96,934	502,933
Fixed cost of Goods	24,524	24,524	24,524	24,524	24,524	24,524	24,524	24,524	24,524	24,524	24,524	24,524	294,289
Gross Profit	-24,524	-24,524	-24,524	-24,524	-24,524	-24,524	-24,524	58,611	76,875	76,875	76,875	76,875	194,444
% of Sales	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	27.58%	36.18%	36.18%	36.18%	36.18%	18.30%
Cucumber & Tomatoes													
Sales	0	0	1,345,833	566,667	495,833	495,833	0	0	0	0	0	0	2,904,167
Material	0	0	141,667	42,500	28,333	28,333	0	0	0	0	0	0	240,833
Other Recurrent Inputs	0	0	464,411	185,764	183,554	183,186	0	0	0	0	0	0	1,016,915
Fixed cost of Goods	55,179	55,179	55,179	55,179	55,179	55,179	55,179	55,179	55,179	55,179	55,179	55,179	662,150
Gross Profit	-55,179	-55,179	684,577	283,223	228,767	229,135	-55,179	-55,179	-55,179	-55,179	-55,179	-55,179	984,269
% of Sales	0.00%	0.00%	50.87%	49.98%	46.14%	46.21%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	33.89%
Onions & Garlic													
Sales	0	0	779,167	779,167	779,167	779,167	0	0	0	0	0	0	3,116,667
Material	0	0	49,583	49,583	49,583	49,583	0	0	0	0	0	0	198,333
Other Recurrent Inputs	0	0	371,528	371,528	367,108	366,372	0	0	0	0	0	0	1,476,537
Fixed cost of Goods	85,834	85,834	85,834	85,834	85,834	85,834	85,834	85,834	85,834	85,834	85,834	85,834	1,030,011
Gross Profit	-85,834	-85,834	272,221	272,221	276,641	277,377	-85,834	-85,834	-85,834	-85,834	-85,834	-85,834	411,785
% of Sales	0.00%	0.00%	34.94%	34.94%	35.50%	35.60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	13.21%
Other Products													
Sales	1,204,167	1,700,000	496,833	1,275,000	1,275,000	991,667	2,975,000	708,333	0	0	0	0	10,625,000
Material	77,917	89,167	21,250	85,000	85,000	77,917	198,333	42,500	0	0	0	0	687,083
Other Recurrent Inputs	196,341	291,906	92,882	371,528	367,108	366,372	747,477	230,396	0	0	0	0	2,663,012
Fixed cost of Goods	165,537	165,537	165,537	165,537	165,537	165,537	165,537	165,537	165,537	165,537	165,537	165,537	1,986,449
Gross Profit	765,372	1,143,390	216,164	652,934	657,354	381,841	1,863,652	269,899	-165,537	-165,537	-165,537	-165,537	5,288,456
% of Sales	63.56%	67.26%	43.50%	51.21%	51.56%	38.50%	62.64%	38.10%	0.00%	0.00%	0.00%	0.00%	49.77%

Table (F-2): BUDGET (at full capacity/month) ***

	1/15	2/15	3/15	4/15	5/15	6/15	7/15	8/15	9/15	10/15	11/15	12/15	Year Total
Sales													
Olives	2,266,667	1,983,333	0	0	0	0	0	0	2,550,000	2,550,000	2,550,000	2,550,000	14,450,000
Lemons	0	0	0	0	0	0	0	212,500	212,500	212,500	212,500	212,500	1,062,500
Cucumber & Tomatoes	0	0	1,345,833	566,667	495,833	495,833	0	0	0	0	0	0	2,904,167
Onions & Garlic	0	0	779,167	779,167	779,167	779,167	0	0	0	0	0	0	3,116,667
Other Products	1,204,167	1,700,000	495,833	1,275,000	1,275,000	991,667	2,975,000	708,333	0	0	0	0	10,625,000
Total Sales	3,470,833	3,683,333	2,620,833	2,620,833	2,550,000	2,266,667	2,975,000	920,833	2,762,500	2,762,500	2,762,500	2,762,500	32,158,333
Cost of Goods sold													
Material	361,250	347,083	347,083	347,083	347,083	347,083	347,083	347,083	347,083	347,083	347,083	347,083	4,179,167
Other Recurrent Inputs	976,705	973,021	973,021	973,021	973,021	973,021	973,021	973,021	973,021	973,021	973,021	973,021	11,679,938
Total Variable COGS	1,337,955	1,320,105	1,320,105	1,320,105	1,320,105	1,320,105	1,320,105	1,320,105	1,320,105	1,320,105	1,320,105	1,320,105	15,859,105
% of Total Sales	38.55%	35.84%	50.37%	50.37%	51.77%	58.24%	44.37%	143.36%	47.79%	47.79%	47.79%	47.79%	49.32%
Cost of goods soled													
Land	833	833	833	833	833	833	833	833	833	833	833	833	10,000
Admin. Buildings	694	694	694	694	694	694	694	694	694	694	694	694	8,333
Production Facilities & Infrastructu	3,472	3,472	3,472	3,472	3,472	3,472	3,472	3,472	3,472	3,472	3,472	3,472	41,667
Raw Material Storage Facilities	556	556	556	556	556	556	556	556	556	556	556	556	6,667
Civil Works (Water, Drainage, etc	1,389	1,389	1,389	1,389	1,389	1,389	1,389	1,389	1,389	1,389	1,389	1,389	16,667
Power Stations	1,042	1,042	1,042	1,042	1,042	1,042	1,042	1,042	1,042	1,042	1,042	1,042	12,500
Production Lines Cost	84,367	84,367	84,367	84,367	84,367	84,367	84,367	84,367	84,367	84,367	84,367	84,367	1,012,409
Office Supplies	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	18,000
Transportation Units	4,167	4,167	4,167	4,167	4,167	4,167	4,167	4,167	4,167	4,167	4,167	4,167	50,000
Pre-operating Cost	4,167	4,167	4,167	4,167	4,167	4,167	4,167	4,167	4,167	4,167	4,167	4,167	50,000
Permits, etc.	23	23	23	23	23	23	23	23	23	23	23	23	270
Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Working capital	510,892	510,892	510,892	510,892	510,892	510,892	510,892	510,892	510,892	510,892	510,892	510,892	6,130,708
Total fixed cost of goods	613,102	613,102	613,102	613,102	613,102	613,102	613,102	613,102	613,102	613,102	613,102	613,102	7,357,229
% of Total Sales	17.66%	16.65%	23.39%	23.39%	24.04%	27.05%	20.61%	66.58%	22.19%	22.19%	22.18%	22.19%	22.88%
Total Cost of Goods Sold	1,951,056	1,933,206	1,933,206	1,933,206	1,933,206	1,933,206	1,933,206	1,933,206	1,933,206	1,933,206	1,933,206	1,933,206	23,216,335
Gross Profit	1,519,777	1,750,127	687,627	687,627	616,794	333,460	1,041,794	-1,012,373	829,294	829,294	829,294	829,294	8,942,009
% of Total Sales	43.79%	47.51%	26.24%	26.24%	24.19%	14.71%	35.02%	-109.94%	30.02%	30.02%	30.02%	30.02%	27.81%
Operating Expenses													
Sales & Marketing													
Advertising	10,000	0	0	0	0	0	0	0	0	0	0	0	10,000
Commissions	10,000	0	0	0	0	0	0	0	0	0	0	0	10,000
- or - % of Sales	0	0	0	0	0	0	0	0	0	0	0	0	0
Entertainment	5,000	0	0	0	0	0	0	0	0	0	0	0	5,000
Literature	10,000	0	0	0	0	0	0	0	0	0	0	0	10,000
Promotions	20,000	0	0	0	0	0	0	0	0	0	0	0	20,000
Salaries	10,000	0	0	0	0	0	0	0	0	0	0	0	10,000
Trade Shows	20,000	0	0	0	0	0	0	0	0	0	0	0	20,000
Travel	10,000	0	0	0	0	0	0	0	0	0	0	0	10,000
Total Sales & Marketing Costs	95,000	0	0	0	0	0	0	0	0	0	0	0	95,000
% of Total Sales	2.74%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.30%

Continued ...

BUDGET (at full capacity/month) ... Continued

Research & Development													
Consulting	10,000	0	0	0	0	0	0	0	0	0	0	0	10000
Equipment (Expensed Purchases)	0	0	0	0	0	0	0	0	0	0	0	0	0
R & D Materials	8,000	0	0	0	0	0	0	0	0	0	0	0	8000
R & D Salaries	8,000	0	0	0	0	0	0	0	0	0	0	0	8000
Total R & D Costs	26000	0	0	0	0	0	0	0	0	0	0	0	26000
% of Total Sales	0.75%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.08%
General & Administration													
Accounting	10,000	0	0	0	0	0	0	0	0	0	0	0	10,000
Admin Salaries	5,000	0	0	0	0	0	0	0	0	0	0	0	5,000
Bad Debts	3,000	0	0	0	0	0	0	0	0	0	0	0	3,000
Depreciation	5,000	0	0	0	0	0	0	0	0	0	0	0	5,000
Equipment Cost/Small Purchases	10,000	0	0	0	0	0	0	0	0	0	0	0	10,000
Insurance	5,000	0	0	0	0	0	0	0	0	0	0	0	5,000
Legal Fees	10,000	0	0	0	0	0	0	0	0	0	0	0	10,000
Licenses and Permits	10,000	0	0	0	0	0	0	0	0	0	0	0	10,000
Office Expenses	10,000	0	0	0	0	0	0	0	0	0	0	0	10,000
Office Cost	0	0	0	0	0	0	0	0	0	0	0	0	0
Taxes (non-Income Taxes)	5,000	0	0	0	0	0	0	0	0	0	0	0	5,000
Telephone	10,000	0	0	0	0	0	0	0	0	0	0	0	10,000
Utilities	0	0	0	0	0	0	0	0	0	0	0	0	0
Total G & A Costs	83,000	0	0	0	0	0	0	0	0	0	0	0	83,000
% of Total Sales	2.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.26%
Total Operating Expenses	204,000	0	0	0	0	0	0	0	0	0	0	0	204000
% of Total Sales	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.63%
Income From Operations	0	1,750,127	687,627	687,627	616,794	333,460	1,041,794	-1,012,373	829,294	829,294	829,294	829,294	7,422,232
% of Total Sales	0	47.51%	26.24%	26.24%	24.19%	14.71%	35.02%	-109.94%	30.02%	30.02%	30.02%	30.02%	23.08%
Interest on Income	0	175,013	68,763	68,763	61,679	33,346	104,179	-101,237	82,929	82,929	82,929	82,929	742,223
Interest expenses	0	0	0	0	0	0	0	0	0	0	0	0	0
Income before Taxes	0	1,750,127	687,627	687,627	616,794	333,460	1,041,794	-1,012,373	829,294	829,294	829,294	829,294	7,422,232
Taxes on Income	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Income After Taxes	0	1,750,127	687,627	687,627	616,794	333,460	1,041,794	-1,012,373	829,294	829,294	829,294	829,294	7,422,232
% of Total Sales	0	47.51%	26.24%	26.24%	24.19%	14.71%	35.02%	-109.94%	30.02%	30.02%	30.02%	30.02%	23.08%

Table (F-3): INCOME STATEMENT (at full capacity/month) ***

	1/15	2/15	3/15	4/15	5/15	6/15	7/15	8/15	9/15	10/15	11/15	12/15	Year Total
Sales													
Olives	2,266,667	1,983,333	0	0	0	0	0	0	2,550,000	2,550,000	2,550,000	2,550,000	14,450,000
Lemons	0	0	0	0	0	0	0	212,500	212,500	212,500	212,500	212,500	1,062,500
Cucumber & Tomatoes	0	0	1,345,833	566,667	495,833	495,833	0	0	0	0	0	0	2,904,167
Onions & Garlic	0	0	779,167	779,167	779,167	779,167	0	0	0	0	0	0	3,116,667
Other Products	1,204,167	1,700,000	495,833	1,275,000	1,275,000	991,667	2,975,000	708,333	0	0	0	0	10,625,000
$0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Sales	3,470,833	3,683,333	2,620,833	2,620,833	2,550,000	2,266,667	2,975,000	920,833	2,762,500	2,762,500	2,762,500	2,762,500	32,158,333
Cost of Goods sold													
Material	364,083	347,083	347,083	347,083	347,083	347,083	347,083	347,083	347,083	347,083	347,083	347,083	4,179,167
Other Recurrent Inputs	973,705	973,021	973,021	973,021	973,021	973,021	973,021	973,021	973,021	973,021	973,021	973,021	11,679,938
Total Variable COGS	1,337,968	1,320,105	1,320,105	1,320,105	1,320,105	1,320,105	1,320,105	1,320,105	1,320,105	1,320,105	1,320,105	1,320,105	15,859,105
% of Total Sales	38.55%	35.84%	50.37%	50.37%	51.77%	58.24%	44.37%	143.36%	47.79%	47.79%	47.79%	47.79%	49.32%
Depreciation	0	613,102	613,102	613,102	613,102	613,102	613,102	613,102	613,102	613,102	613,102	613,102	7,357,220
Total Cost of Goods Sold	1,337,968	1,933,206	1,933,206	1,933,206	1,933,206	1,933,206	1,933,206	1,933,206	1,933,206	1,933,206	1,933,206	1,933,206	23,216,326
Gross Profit	2,132,879	1,750,127	687,627	687,627	616,794	333,460	1,041,794	-1,012,373	829,294	829,294	829,294	829,294	8,942,009
% of Total Sales	61.45%	47.51%	26.24%	26.24%	24.19%	14.71%	35.02%	-109.94%	30.02%	30.02%	30.02%	30.02%	27.81%
Operating Expenses													
Sales & Marketing	96,000	0	0	0	0	0	0	0	0	0	0	0	96000
Research & Development	26000	0	0	0	0	0	0	0	0	0	0	0	26000
G & A (without Depreciation)	78,000	0	0	0	0	0	0	0	0	0	0	0	78,000
Depreciation	5,000	0	0	0	0	0	0	0	0	0	0	0	5,000
Total Operating Expenses	204,000	0	0	0	0	0	0	0	0	0	0	0	204,000
% of Total Sales	5.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.63%
Income From Operations	1,928,879	1,750,127	687,627	687,627	616,794	333,460	1,041,794	-1,012,373	829,294	829,294	829,294	829,294	8,738,009
% of Total Sales	55.57%	47.51%	26.24%	26.24%	24.19%	14.71%	35.02%	-109.94%	30.02%	30.02%	30.02%	30.02%	27.17%
Interest Income	0	175,013	68,763	68,763	61,679	33,346	104,179	-101,237	82,929	82,929	82,929	82,929	742,223
Interest Expense	0	0	0	0	0	0	0	0	0	0	0	0	0
Income before Taxes	1,928,879	1,925,140	756,390	756,390	678,473	366,806	1,145,973	-1,113,610	912,223	912,223	912,223	912,223	9,480,232
Taxes on Income	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Income After Taxes	1,928,879	1,925,140	756,390	756,390	678,473	366,806	1,145,973	-1,113,610	912,223	912,223	912,223	912,223	9,480,232
% of Total Sales	55.57%	52.27%	28.86%	28.86%	26.61%	16.18%	38.52%	-120.94%	33.02%	33.02%	33.02%	33.02%	29.48%

Table (F-4): BALANCE SHEET (at full capacity/month) ***

As of the Month Ending:

	1/15	2/15	3/15	4/15	5/15	6/15	7/15	8/15	9/15	10/15	11/15	12/15	Year Total
Assets													
Current Assets													
Cash	3,470,833	3,683,333	2,620,833	2,620,833	2,550,000	2,266,667	2,975,000	920,833	2,762,500	2,762,500	2,762,500	2,762,500	32,158,333
Investments	105,862	105,862	105,862	105,862	105,862	105,862	105,862	105,862	105,862	105,862	105,862	105,862	1,270,342
Accounts Receivable	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes Receivable	0	0	0	0	0	0	0	0	0	0	0	0	0
Inventory	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Current Assets	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Current Assets	3,576,695	3,789,195	2,726,695	2,726,695	2,655,862	2,372,528	3,080,862	1,026,695	2,868,362	2,868,362	2,868,362	2,868,362	33,428,675
													0
Plant & Equipment													0
Land	833	833	833	833	833	833	833	833	833	833	833	833	10,000
Admin. Buildings	694	694	694	694	694	694	694	694	694	694	694	694	8,333
Production Facilities & Infrastruc	3,472	3,472	3,472	3,472	3,472	3,472	3,472	3,472	3,472	3,472	3,472	3,472	41,667
Raw Material Storage Facilities	556	556	556	556	556	556	556	556	556	556	556	556	6,667
Civil Works (Water, Drainage, et	1,389	1,389	1,389	1,389	1,389	1,389	1,389	1,389	1,389	1,389	1,389	1,389	16,667
Power Stations	1,042	1,042	1,042	1,042	1,042	1,042	1,042	1,042	1,042	1,042	1,042	1,042	12,500
Production Lines Cost	84,367	84,367	84,367	84,367	84,367	84,367	84,367	84,367	84,367	84,367	84,367	84,367	1,012,409
Office Supplies	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	18,000
Transportation Units	4,167	4,167	4,167	4,167	4,167	4,167	4,167	4,167	4,167	4,167	4,167	4,167	50,000
Pre-operating Cost	4,167	4,167	4,167	4,167	4,167	4,167	4,167	4,167	4,167	4,167	4,167	4,167	50,000
Permits, etc.	23	23	23	23	23	23	23	23	23	23	23	23	270
Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Working capital	510,892	510,892	510,892	510,892	510,892	510,892	510,892	510,892	510,892	510,892	510,892	510,892	6,130,708
													0
Other Assets	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Assets	4,189,797	4,189,797	4,189,797	4,189,797	4,189,797	4,189,797	4,189,797	4,189,797	4,189,797	4,189,797	4,189,797	4,189,797	50,277,562
													0
Liabilities & Owners' Equity													0
Current Liabilities													0
Short Term Debt	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	25,138,781
Accounts Payable	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Payables	0	0	0	0	0	0	0	0	0	0	0	0	0
Accrued Liabilities	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Current Liabilities	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	25,138,781
													0
Long Term Debt	2,094,898	0	0	0	0	0	0	0	0	0	0	0	2,094,898
Total Liabilities	4,189,797	0	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	25,138,781
													0
Owner/Stockholder Equity													0
Common Stock	698,299	698,299	698,299	698,299	698,299	698,299	698,299	698,299	698,299	698,299	698,299	698,299	8,379,594
Retained Earnings	698,299	698,299	698,299	698,299	698,299	698,299	698,299	698,299	698,299	698,299	698,299	698,299	8,379,594
Dividends Payable	698,299	698,299	698,299	698,299	698,299	698,299	698,299	698,299	698,299	698,299	698,299	698,299	8,379,594
Total Owners' Equity	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	25,138,781
													0
Total Liabilities & Equity	6,284,695	2,094,898	4,189,797	4,189,797	4,189,797	4,189,797	4,189,797	4,189,797	4,189,797	4,189,797	4,189,797	4,189,797	50,277,562

Table (F-5): CASH FLOWS (STATEMENT of CHANGES in FINANCIAL POSITION: at full capacity/month) ***

	1/15	2/15	3/15	4/15	5/15	6/15	7/15	8/15	9/15	10/15	11/15	12/15	Year Total
Sources of Cash:													
Operations during the year													
Net Income After Taxes	0	1,750,127	687,627	687,627	616,794	333,460	1,041,794	-1,012,373	829,294	829,294	829,294	829,294	7,422,232
Add items not decreasing cash													
Depreciation	0	0	0	0	0	0	0	0	0	0	0	0	0
Increase in Accounts Payable	0	0	0	0	0	0	0	0	0	0	0	0	0
Increase in Other Payables	0	0	0	0	0	0	0	0	0	0	0	0	0
Increase in Accrued Liabilities	0	0	0	0	0	0	0	0	0	0	0	0	0
Deduct items not increasing cash													
Increase in Accounts Receivabl	0	0	0	0	0	0	0	0	0	0	0	0	0
Increase in Inventory	0	0	0	0	0	0	0	0	0	0	0	0	0
Cash from Operations	0	1,750,127	687,627	687,627	616,794	333,460	1,041,794	-1,012,373	829,294	829,294	829,294	829,294	7,422,232
Financing & Other													
Sale of Stock	0	0	0	0	0	0	0	0	0	0	0	0	0
Proceeds from Short Term Loans	0	0	0	0	0	0	0	0	0	0	0	0	0
Proceeds from Long Term Loans	0	0	0	0	0	0	0	0	0	0	0	0	0
Sale of Investments	0	0	0	0	0	0	0	0	0	0	0	0	0
Collection of Notes Receivable	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduction of Other Current Asse	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduction of Other Assets	0	0	0	0	0	0	0	0	0	0	0	0	0
Cash from Operations & Financ	0	1,750,127	687,627	687,627	616,794	333,460	1,041,794	-1,012,373	829,294	829,294	829,294	829,294	7,422,232
Applications of Cash:													
Payment of Dividends	0	0	0	0	0	0	0	0	0	0	0	0	0
Purchases of Fixed Assets	0	0	0	0	0	0	0	0	0	0	0	0	0
Repayment of Short Term Loans	0	0	0	0	0	0	0	0	0	0	0	0	0
Repayment of Long Term Loans	0	0	0	0	0	0	0	0	0	0	0	0	0
Purchase of Investments	0	0	0	0	0	0	0	0	0	0	0	0	0
Increase in Notes Receivable	0	0	0	0	0	0	0	0	0	0	0	0	0
Increase in Other Current Assets	0	0	0	0	0	0	0	0	0	0	0	0	0
Increase in Other Assets	0	0	0	0	0	0	0	0	0	0	0	0	0
Increase/(Decrease) in Cash	0	1,750,127	687,627	687,627	616,794	333,460	1,041,794	-1,012,373	829,294	829,294	829,294	829,294	7,422,232
Change in Cash Balance													
Ending Cash Balance	0	1,750,127	2,620,833	2,620,833	2,550,000	2,266,667	2,975,000	920,833	2,762,500	2,762,500	2,762,500	2,762,500	2,762,500
Beginning Cash Balance	0	0	1,750,127	2,620,833	2,620,833	2,550,000	2,266,667	2,975,000	920,833	2,762,500	2,762,500	2,762,500	0
Increase/(Decrease) in Cash	0	1,750,127	870,706	0	-70,833	-283,333	708,333	-2,054,167	1,841,667	0	0	0	2,762,500
	0	0	0	0	0	0	0	0	0	0	0	0	0

*** INCOME STATEMENT (Years 1 -10) ***

Sales	Year 1	% of Total Sales	Year 2	% of Total Sales	Year 3	% of Total Sales	Year 4	% of Total Sales	Year 5	% of Total Sales
Olives	0	0.00%	14,450,000	44.93%	14,450,000	44.93%	14,450,000	44.93%	14,450,000	44.93%
Lemons	0	0.00%	1,062,500	3.30%	1,062,500	3.30%	1,062,500	3.30%	1,062,500	3.30%
Cucumber & Tomatoes	0	0.00%	2,904,167	9.03%	2,904,167	9.03%	2,904,167	9.03%	2,904,167	9.03%
Onions & Garlic	0	0.00%	3,116,667	9.69%	3,116,667	9.69%	3,116,667	9.69%	3,116,667	9.69%
Other Products	0	0.00%	10,625,000	33.04%	10,625,000	33.04%	10,625,000	33.04%	10,625,000	33.04%
Total Sales	0	0.00%	32,158,333	100.00%	32,158,333	100.00%	32,158,333	100.00%	32,158,333	100.00%
Cost of Goods Sold										
Material	0	0.00%	4,179,167	13.00%	4,179,167	13.00%	4,179,167	13.00%	4,179,167	13.00%
Other recurrent inputs	0	0.00%	11,679,938	36.32%	11,679,938	36.32%	11,679,938	36.32%	11,679,938	36.32%
Total Variable COGS	0	0.00%	15,859,105	49.32%	15,859,105	49.32%	15,859,105	49.32%	15,859,105	49.32%
Total Fixed Cost of Goods & Servi	7,357,220	0.00%	7,357,220	22.88%	7,357,220	22.88%	7,357,220	22.88%	7,357,220	22.88%
Total Cost of Goods Sold	7,357,220	0.00%	23,216,325	72.19%	23,216,325	72.19%	23,216,325	72.19%	23,216,325	72.19%
Gross Profit	-7,357,220	0.00%	-7,357,220	-22.88%	-7,357,220	-22.88%	-7,357,220	-22.88%	-7,357,220	-22.88%
Operating Expenses										
Sales & Marketing	0	0.00%	95,000	0.30%	95,000	0.30%	95,000	0.30%	95,000	0.30%
Research & Development	0	0.00%	26,000	0.08%	26,000	0.08%	26,000	0.08%	26,000	0.08%
G & A (without Depreciation)	0	0.00%	83,000	0.26%	83,000	0.26%	83,000	0.26%	83,000	0.26%
Depreciation	0	0.00%	5,000	0.02%	5,000	0.02%	5,000	0.02%	5,000	0.02%
Total Operating Expenses	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Income From Operations	0	0.00%	-7,357,220	-22.88%	-7,357,220	-22.88%	-7,357,220	-22.88%	-7,357,220	-22.88%
Interest Income	742,223	0.00%	742,223	2.31%	742,223	2.31%	742,223	2.31%	742,223	2.31%
Interest Expense										
Income before Taxes	742,223	0.00%	742,223	2.31%	742,223	2.31%	742,223	2.31%	742,223	2.31%
Taxes on Income										
Net Income After Taxes	742,223	0.00%	742,223	2.31%	742,223	2.31%	742,223	2.31%	742,223	2.31%

*** BALANCE SHEET (Years 1 - 10) ***

As of the Year Ending:

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Assets										
Current Assets										
Cash	3,470,833	3,470,833	3,470,833	3,470,833	3,470,833	3,470,833	3,470,833	3,470,833	3,470,833	3,470,833
Investments	105,862	105,862	105,862	105,862	105,862	105,862	105,862	105,862	105,862	105,862
Accounts Receivable	0	0	0	0	0	0	0	0	0	0
Notes Receivable	0	0	0	0	0	0	0	0	0	0
Inventory	0	0	0	0	0	0	0	0	0	0
Other Current Assets	0	0	0	0	0	0	0	0	0	0
Total Current Assets	3,576,695	3,576,695	3,576,695	3,576,695	3,576,695	3,576,695	3,576,695	3,576,695	3,576,695	3,576,695
Plant & Equipment										
Land	833	833	833	833	833	833	833	833	833	10,000
Admin. Buildings	694	694	694	694	694	694	694	694	694	8,333
Production Facilities & Infrastruc.	3,472	3,472	3,472	3,472	3,472	3,472	3,472	3,472	3,472	41,667
Raw Material Storage Facilities	556	556	556	556	556	556	556	556	556	6,667
Civil Works (Water, Drainage, et	1,389	1,389	1,389	1,389	1,389	1,389	1,389	1,389	1,389	16,667
Power Stations	1,042	1,042	1,042	1,042	1,042	1,042	1,042	1,042	1,042	12,500
Production Lines Cost	84,367	84,367	84,367	84,367	84,367	84,367	84,367	84,367	84,367	1,012,403
Office Supplies	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	18,000
Transportation Units	4,167	4,167	4,167	4,167	4,167	4,167	4,167	4,167	4,167	50,000
Pre-operating Cost	4,167	4,167	4,167	4,167	4,167	4,167	4,167	4,167	4,167	50,000
Permits, etc	23	23	23	23	23	23	23	23	23	270
Other	0	0	0	0	0	0	0	0	0	0
Working capital	510,892	510,892	510,892	510,892	510,892	510,892	510,892	510,892	510,892	6,130,708
Total Net Plant & Equipment	613,102	613,102	613,102	613,102	613,102	613,102	613,102			
		0	0	0	0	0	0	0	0	0
Other Assets	0	0	0	0	0	0	0	0	0	0
Total Assets	4,189,797	4,189,797	4,189,797	4,189,797	4,189,797	4,189,797	4,189,797	4,189,797	4,189,797	4,189,797
		0	0	0	0	0	0	0	0	0
Liabilities & Owners' Equity		0	0	0	0	0	0	0	0	0
Current Liabilities		0	0	0	0	0	0	0	0	0
Short Term Debt	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898
Accounts Payable	0	0	0	0	0	0	0	0	0	0
Other Payables	0	0	0	0	0	0	0	0	0	0
Accrued Liabilities	0	0	0	0	0	0	0	0	0	0
Total Current Liabilities	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898
		0	0	0	0	0	0	0	0	0
Long Term Debt	0	0	0	0	0	0	0	0	0	0
Total Liabilities	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898
		0	0	0	0	0	0	0	0	0
Owner/Stockholder Equity		0	0	0	0	0	0	0	0	0
Common Stock	698,299	698,299	698,299	698,299	698,299	698,299	698,299	698,299	698,299	698,299
Retained Earnings	698,299	698,299	698,299	698,299	698,299	698,299	698,299	698,299	698,299	698,299
Dividends Payable	698,299	698,299	698,299	698,299	698,299	698,299	698,299	698,299	698,299	698,299
Total Owners' Equity	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898	2,094,898
		0	0	0	0	0	0	0	0	0
Total Liabilities & Equity	4,189,797	4,189,797	4,189,797	4,189,797	4,189,797	4,189,797	4,189,797	4,189,797	4,189,797	4,189,797

*** CASH FLOWS (STATEMENT of CHANGES in FINANCIAL POSITION: Years 1 - 10) ***

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Sources of Cash:										
Operations during the year:										
Net Income After Taxes	9,791,667	15,666,667	21,541,667	27,416,667	33,291,667	33,291,667	33,291,667	33,291,667	33,291,667	33,291,667
Add items not decreasing cash										
Depreciation	0	0	0	0	0	0	0	0	0	0
Increase in Accounts Payable	0	0	0	0	0	0	0	0	0	0
Increase in Other Payables	0	0	0	0	0	0	0	0	0	0
Increase in Accrued Liabilities	0	0	0	0	0	0	0	0	0	0
Deduct items not increasing cash										
Increase in Accounts Receivabl	0	0	0	0	0	0	0	0	0	0
Increase in Inventory	0	0	0	0	0	0	0	0	0	0
Cash from Operations	9,791,667	15,666,667	21,541,667	27,416,667	33,291,667	33,291,667	33,291,667	33,291,667	33,291,667	33,291,667
Financing & Other:										
Sale of Stock	0	0	0	0	0	0	0	0	0	0
Proceeds from Short Term Loans	0	0	0	0	0	0	0	0	0	0
Proceeds from Long Term Loans	25,406,838	0	0	0	0	0	0	0	0	0
Sale of Investments	0	0	0	0	0	0	0	0	0	0
Collection of Notes Receivable	0	0	0	0	0	0	0	0	0	0
Reduction of Other Current Asse	0	0	0	0	0	0	0	0	0	0
Reduction of Other Assets	0	0	0	0	0	0	0	0	0	0
Cash from Operations & Financ:	35,198,504	15,666,667	21,541,667	27,416,667	33,291,667	33,291,667	33,291,667	33,291,667	33,291,667	33,291,667
Applications of Cash:										
Payment of Dividends	9,791,667	15,666,667	21,541,667	27,416,667	33,291,667	33,291,667	33,291,667	33,291,667	33,291,667	33,291,667
Purchases of Fixed Assets	0	0	0	0	0	0	0	0	0	0
Repayment of Short Term Loans	0	0	0	0	0	0	0	0	0	0
Repayment of Long Term Loans	0	0	3,366,406	3,144,096	2,921,786	2,699,477	2,477,167	2,254,857	2,032,547	1,810,237
Purchase of Investments	0	0	0	0	0	0	0	0	0	0
Increase in Notes Receivable	0	0	0	0	0	0	0	0	0	0
Increase in Other Current Assets	0	0	0	0	0	0	0	0	0	0
Increase in Other Assets	0	0	0	0	0	0	0	0	0	0
Increase/(Decrease) in Cash	25,406,838	0	-3366405.99	-3144096.18	-2921786.33	-2699476.5	-2477166.67	-2254856.85	-2032547.02	-1810237.19
Change in Cash Balance										
Ending Cash Balance	2,782,500	3470833.333	3470833.333	3470833.333	3470833.333	3470833.333	3470833.333	3470833.333	3470833.333	3470833.333
Beginning Cash Balance	0	2782500	3470833.333	3470833.333	3470833.333	3470833.333	3470833.333	3470833.333	3470833.333	3470833.333
Increase/(Decrease) in Cash	2,782,500	708333.3333	0	0	0	0	0	0	0	0

Table (F-6): RATIO ANALYSIS (at maximum capacity/month) ***

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Ratios										
Current Ratio	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.71
Quick Ratio (Acid Test)	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66
Return on Total Assets	17.72%	17.72%	17.72%	17.72%	17.72%	17.72%	17.72%	17.72%	17.72%	17.72%
Total Assets Turnover	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Debt to Total Assets	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gross Profit Margin	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operating Profit Margin	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Profit Margin	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Return on Sales	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Return on Owners' Equity	35.43%	35.43%	35.43%	35.43%	35.43%	35.43%	35.43%	35.43%	35.43%	35.43%
Total Debt to Owners' Equity	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Current Ratio	= Current Assets / Current Liabilities
Quick Ratio (Acid Test)	= Quick Assets (Cash + Receivables) / Current Liabilities
Return on Total Assets	= Net Income After Taxes / Total Assets (at year end)
Total Assets Turnover	= Total Sales / Total Assets (at year end)
Total Debt to Total Assets	= Total Liabilities / Total Assets
Gross Profit Margin	= Gross Profit (Net Sales) / Total Sales
Operating Profit Margin	= Income From Operations (Before Interest & Taxes) / Total Sales
Net Profit Margin	= Net Income After Taxes / Total Sales
Return on Sales	= Net Income After Taxes / Gross Profit (Net Sales)
Return on Owners' Equity	= Net Income After Taxes / Total Owners' Equity (at year end)
Total Debt to Owners' Equity	= Total Liabilities / Total Owners' Equity

Table (F-7): BREAK-EVEN ANALYSIS (at maximum capacity/month) ***

	1/15	2/15	3/15	4/15	5/15	6/15	7/15	8/15	9/15	10/15	11/15	12/15	Year Total
Sales	3,470,833	3,883,333	2,620,833	2,620,833	2,550,000	2,266,667	2,975,000	920,833	2,762,500	2,762,500	2,762,500	2,762,500	32,158,333
Fixed Costs													
Fixed Cost of Goods & Services	613,102	613,102	613,102	613,102	613,102	613,102	613,102	613,102	613,102	613,102	613,102	613,102	7,357,220
Sales & Marketing (w/o Commissi	85,000	0	0	0	0	0	0	0	0	0	0	0	85,000
Research & Development	26,000	0	0	0	0	0	0	0	0	0	0	0	26,000
G & A (without Depreciation)	78,000	0	0	0	0	0	0	0	0	0	0	0	78,000
Depreciation	5,000	0	0	0	0	0	0	0	0	0	0	0	5,000
Less Reclassified Fixed Costs	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Fixed Costs	807,102	613,102	613,102	613,102	613,102	613,102	613,102	613,102	613,102	613,102	613,102	613,102	7,561,220
Variable Costs													
Material and Labor	1,337,955	1,320,105	1,320,105	1,320,105	1,320,105	1,320,105	1,320,105	1,320,105	1,320,105	1,320,105	1,320,105	1,320,105	15,859,105
Commissions	10,000	0	0	0	0	0	0	0	0	0	0	0	10,000
Plus Reclassified Fixed Costs	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Variable Costs	1,347,955	1,320,105	1,320,105	1,320,105	1,320,105	1,320,105	1,320,105	1,320,105	1,320,105	1,320,105	1,320,105	1,320,105	15,869,105
Income from Operations	1,315,777	1,750,127	687,627	687,627	616,794	333,460	1,041,794	-1,012,373	829,294	829,294	829,294	829,294	8,738,009
Interest Income(Expense) - "Fixed"	0	175,013	68,763	68,763	61,679	33,346	104,179	-101,237	82,929	82,929	82,929	82,929	742,223
Income Taxes - "Variable"	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Income After Taxes	1,315,777	1,925,140	756,390	756,390	678,473	366,806	1,145,973	-1,113,610	912,223	912,223	912,223	912,223	9,480,232
Income from Operations Analysis													
Contribution Margin	61.16%	64.16%	49.63%	49.63%	48.23%	41.76%	55.63%	-43.36%	52.21%	52.21%	52.21%	52.21%	50.65%
Break-Even Sales Volume	1,319,583	955,582	1,235,336	1,235,336	1,271,172	1,468,152	1,102,171	-1,413,987	1,174,223	1,174,223	1,174,223	1,174,223	14,907,682
Sales Volume Above Break-Even	2,151,250	2,727,751	1,385,497	1,385,497	1,278,828	798,515	1,872,829	2,334,820	1,588,277	1,588,277	1,588,277	1,588,277	17,250,651
Net Income After Taxes Analysis													
Contribution Margin	61.16%	64.16%	49.63%	49.63%	48.23%	41.76%	55.63%	-43.36%	52.21%	52.21%	52.21%	52.21%	50.65%
Break-Even Sales Volume	1,319,583	1,228,367	1,373,886	1,373,886	1,399,055	1,548,004	1,289,454	-1,180,505	1,333,050	1,333,050	1,333,050	1,333,050	16,372,986
Sales Volume Above Break-Even	2,151,250	2,454,978	1,246,947	1,246,947	1,150,945	718,663	1,685,546	2,101,338	1,429,450	1,429,450	1,429,450	1,429,450	15,785,347

Production Lines Cost

General Offer for 2.000 Tn. Prices in Euros

April 16th 2003

1.- Recollection/Calibrating/Treatment:	Units	Euros/ud 000'	Total Euros 000'	Life Time (years)	Annualized Cost (Without Discount)
Reception Hopper for olive's cont.	1	5.17831	5.17831	8	0.647
Elevator grooved band	1	6.37330	6.37330	8	0.797
Precalibrating	1	22.30066	22.30066	12	1.858
Special Device Hopper to feed sorting tables	1	1.99166	1.99166	12	0.166
Sorting tables	2	14.73827	29.47654	10	2.948
Belt convey. pick from sorting tables	2	9.95829	19.91658	12	1.660
Elevator to aerial tanks	1	10.35662	10.35662	12	0.863
Elevator to drums	1	3.58498	3.58498	12	0.299
Belt conveyor to feed aerial tanks	1	22.78456	22.78456	12	1.899
Special pump equipment for olives	1	27.88321	27.88321	15	1.859
Special pump for brine	1	5.57664	5.57664	15	0.372
Elevator to calibrating machine	1	9.55996	9.55996	12	0.797
Calibrating machine	1	15.53493	15.53493	12	1.295
Inundated reception hopper	1	10.35662	10.35662	12	0.863
Basket Elevator	1	5.57664	5.57664	12	0.465
Automatic take-off olive's tails (Stemer)	1	21.50990	21.50990	10	2.151
Total 1.-			217.98111		
2.- Pitting/Slicing:					
Inundated reception hopper	1	14.36546	14.36546	12	2.151
Automatic pitting machine	2	24.30000	48.60000	15	0.000
Elevators in stainless steel	6	4.32405	25.94430	12	0.000
Densymeter	1	20.25057	20.25057	10	0.000
Inspection belt	1	7.20675	7.20675	10	0.000
Automatic slicing machine	1	16.33530	16.33530	10	0.000
Washing machine	1	17.15000	17.15000	10	2.151
Total 2.-			148.85238		
3.- Canning Line:					
Inundated reception hopper	1	12.07339	12.07339	12	2.151
Inspection belt	1	6.86447	6.86447	10	0.000
Hot water washing	1	29.68063	29.68063	10	0.000
Rotary Table for empty cans	1	5.65309	5.65309	15	0.000
Automatic filling machine	1	31.49580	31.49580	12	0.000
Weight control point	1	2.42275	2.42275	10	0.000
Automatic brine dosifying	1	17.76686	17.76686	12	2.151
Automatic closing for jars	1	60.56884	60.56884	15	0.000
Re-built closing for small cans 200 c/min	1	96.91014	96.91014	15	0.000
Re-built closing for A10 cans 60 c/min	1	96.91014	96.91014	15	0.000
Re-built closing semi-auto for 5kg 15 c/min	1	24.22754	24.22754	15	0.000
Automatic sterilizer	1	64.60676	64.60676	15	0.000
Basquets for sterilizer	12	1.93820	23.25840	10	2.151
Automatic Pasteurizer 10 meters	1	113.06183	113.06183	15	0.000
Washing and drying tunnel	1	31.61818	31.61818	15	0.000
Accumulation table	1	24.22754	24.22754	10	0.000
Automatic labeller for jars with glue	1	40.37923	40.37923	10	0.000
Table for fill up carton boxes manually	1	8.07585	8.07585	10	0.000
Retractil Tunnel	1	24.22754	24.22754	8	3.151
Automatic carton boxes sealer	1	8.07585	8.07585	10	0.000

Production Lines Cost

General Offer for 2.000 Tn. Prices in Euros

April 16th 2003

1.- Recollection/Calibrating/Treatment:	Units	Euros/ud 000'	Total Euros 000'	Life Time (years)	Annualized Cost (Without Discount)
Conveyors to connect all machine	1	40.37923	40.37923	15	0.000
Total 3.-			**762.88406**		
4.- General Erection	1	81.73760	81.73760		
Total 4.-			**81.73760**		
5.- Installations and Equipments:					
Storage tanks "fermentadores"	200	2.52939	505.87800	20	25.294
Tanks for treatment	10	2.95096	29.50960	20	1.475
Tanks for oxydation	8	7.58817	60.70536	20	3.035
Tanks for brine and soda	4	2.95096	11.80384	20	0.590
Steam installation (without boiler)	1	42.15651	42.15651	10	4.216
Air blowers	2	12.64695	25.29390	10	2.529
Screw air compressor	1	15.17634	15.17634	10	1.518
Air compressed installation	1	21.07826	21.07826	10	2.108
Water installation (without pumps)	1	37.94086	37.94086	10	3.794
Inst. of prep. brine and soda for treat and	1	33.72521	33.72521	15	2.248
Inst. Recuperation of hot water (inc. Tower)	1	59.01912	59.01912	12	4.918
Inst. of prep. brine for canning	1	46.37216	46.37216	12	3.864
Electrical Installation	1	75.03859	75.03859	15	5.003
Oxydation Installation for 8 tanks	1	67.45042	67.45042	12	5.621
Trainning at site 15 days	1	21.07826	21.07826		
Trainning in Spain four people 1 week	1	29.50956	29.50956		
know-how for black and greens	1	42.15651	42.15651		
Total 5.-			**1,123.89250**		
Whole Project in Euros			**2,336.32765**		
Whole Project in 000'LE			**15,186.12972**		

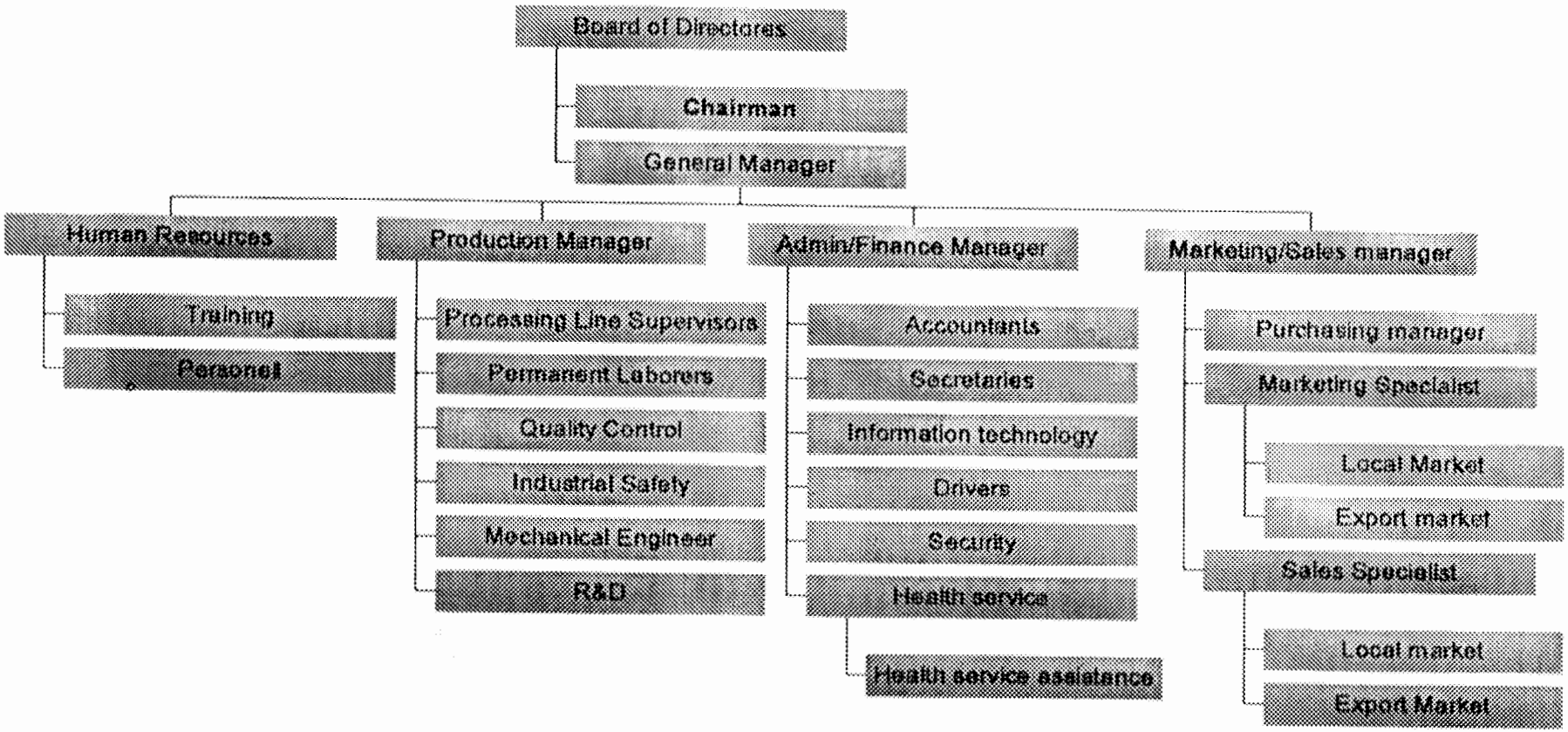
**** Set of Spare Parts Included in Prices:**

Description	Units
Stainless steel pump, for liquid preparation of brine and soda	2
Set of spare parts for air blower	1
Set of spare parts for Pitting machine	1
Set of spare parts for Slice machine	1
Set of spare parts for can metal closing machine	1
Set of spare parts for jars closing machine	1
Set of spare parts for jars labeller	1
Set of spare parts for calibrating machine	1
Set of spare parts for polyester tanks	1
Set of spare parts for Pump equipment for table olives	1
Set of spare parts for Sterilizer	1

Office Supplies and Transportation Facilities

Type	Currency	No. of Units	Cost Per Unit	Total cost
Office Supplies				
Board Meeting Room Frenature	LE	1	15,000	15,000
Air Conditions	LE	3	3,000	9,000
Staff Office Frenature	LE	5	2,000	10,000
Telephone Lines	LE	4	2,000	8,000
Fax Machines	LE	2	2,000	4,000
Small Tools / Supplies	LE	5	200	1,000
Office Equipment	LE	2	6,000	12,000
Computer System	LE	1	30,000	30,000
Sanitation Materials	LE	5	200	1,000
Total Office Supplies	LE			**90,000**
Transportation Units				
Midi Buses (12 P)	LE	2	150,000	300,000
Automobiles (Board)	LE	1	100,000	100,000
Automobiles (Other)	LE	2	50,000	100,000
Total Transportation Units	LE			**500,000**

Exchange rate	US$ =	6.5 LE	
	EUR =	6.5 LE	


Board of Directores
Chairman
General Manager
Human Resources
Training
Personel
Production Manager
Processing Line Supervisors
Permanent Laborers
Quality Control
Industrial Safety
Mechanical Engineer
R&D
Admin/Finance Manager
Accountants
Secretaries
Information technology
Drivers
Security
Health service
Health service assistance
Marketing/Sales manager
Purchasing manager
Marketing Specialist
Local Market
Export market
Sales Specialist
Local market
Export Market

Production Management Salaries*

Type	No.	M. Salary	Incentives &Other Expenses	Annual
Top Management				
Chairman	1	10,000	2000	154,000
Co Chairman	1	7,000	1400	107,800
Production Manager	1	3,000	600	46,200
Sales/Marketing Manager	1	3,000	600	46,200
Admin/FinanceFinancial Manager	1	3,000	600	46,200
Purchasing manager	1	3,000	600	46,200
R&D and Training Manager	1	3,000	600	46,200
Total Quality Assurance Manager	1	3,000	600	46,200
Mechanical Engineer	1	1,000	200	15,400
Marketing Specialist	1	1,000	200	15,400
Secrateries	2	500	100	14,900
Drivers	3	500	100	22,100
Security	2	350	70	10,430
General Services	2	350	70	10,430
Total Top Management Salaries				**627,660**
Production Facilities				
Processing Line Supervisor	3	500	100	22,100
Production Line Permanent Laborers	6	300	60	26,220
Health service	0.5	500	100	4,100
Health service assistance	0.5	500	100	4,100
Accountants	1	500	100	7,700
Quality control	2	500	100	14,900
Industrial safety	0.5	500	100	4,100
Purchasing	1	500	100	7,700
Information technology	1	500	100	7,700
Assistant	2	300	60	8,940
Total Production Management Salaries				**107,560**
Total Production Management Salaries				**735,220**

* Cost of direct labor included in the running cost

Variable Overhead Expenses

Cost Item	Cost LE
Sales & Marketing	
Advertising	10,000
Commissions	10,000
- or - % of Sales	
Entertainment	5,000
Literature	10,000
Promotions	20,000
Salaries	10,000
Trade Shows	20,000
Travel	10,000
Total Sales & Marketing	**95,000**
Research & Development	
Consulting	10,000
Equipment (Expensed Purchases)	10,000
R & D Materials	8,000
R & D Salaries	8,000
Total Research & Development	**36,000**
General & Administrative	
Accounting	10,000
Admin Salaries	5,000
Bad Debts	3,000
Equipment Cost/Small Purchases	5,000
Insurance	10,000
Legal Fees	5,000
Licenses and Permits	10,000
Office Expenses	10,000
Office Cost	10,000
Taxes (non-income Taxes)	0
Telephone	5,000
Utilities	10,000
Total General & Administrative	**83,000**
Grand Total	**214,000**

3

BASICS OF BUSINESS PLANNING

Table of Contents

Part 1: Fundamentals 1

As you start the planning process, begin with a general view of the whole project. Review your goals and consider your options.

Chapter 1: It's About Results 3
- What Makes a Good Plan? 4
- Use of Business Plans 5
- No Time to Plan? A Common Misconception 5
- Keys to Better Business Plans 6
- A Business Plan Fable 6
- Summary 7

Chapter 2: Pick Your Plan 9
- What is a Business Plan? 9
- What is a Start-up Plan? 10
- Is There a Standard Business Plan? 10
- What is Most Important in a Plan? 10
- Can you Suggest a Standard Outline? 10
- Standard Tables and Charts 11
- Form Follows Function 14
- Investor Summaries and Loan Applications 14
- Timeframes: Is Three Years Enough? 14
- Summary 14

Chapter 3: The Mini-Plan 15
- Objectives 15
- Mission Statement 16
- Keys to Success 17
- Break-even Analysis 17
- Market Analysis 19
- Pause for Reflection 20
- Summary 20

Chapter 4: Starting a Business 21
- Customers First 21
- Myths on Starting a Business 22
- A Simpler Plan for Start-ups 22
- Simplified Business Plan Outline 24
- Realistic Start-up Costs 26
- Understand the Risks 27
- Friends and Family Funding 30

301

Licenses, Permits, and Legal Entities 30
The Business Entity 31
Business Names, Trademarks, Copyrights, etc. 34

Part 2: Tell Your Story 39

A standard business plan includes company background information, history, and basic descriptions.

Chapter 5: Describe Your Company 41
Company Information 42
Think Strategically 43
Baseline Numbers 44
Summary 50
Chapter 6: What You Sell 51
Start with a Summary Paragraph 51
Detailed Description 52
Competitive Comparison 52
Sourcing and Fulfillment 53
Technology 53
Future Products 54
Sales Literature 55
Summary 55
Chapter 7: Management Team 57
Planning for People 57
Cover the Bases in Text 58
Develop Your Numbers 60
Summary 62

Part 3: Gathering Information 63

A good plan will include useful information about your market, your customers, and the business you're in.

Chapter 8: The Business You're In 65
Industry Analysis 66
Finding Information 68
Finding Business Assistance 74
Summary 77

302

Chapter 9: Know Your Market 79
Practical Market Research 79
Internet Research for Business Plans 83
Summary 86

Part 4: Forecasting 87

Forecasting is more art than science, a combination of good research, logic, simple math, and educated guessing. It's hard to forecast but it's harder to run a business without forecasting.

Chapter 10: Forecast Your Sales 89
Sales Forecast - Simple 90
Sales Forecast - Detailed 90
Explain Forecast and Related Background 93
Summary 94
Chapter 11: Market 95
Market Segmentation is Critical 95
Market Analysis 96
Filling Out the Text 98
Summary 100
Chapter 12: Expense Budget 101
Simple Math, Simple Numbers 101
Budgeting is About People More Than Numbers 102
Your Budget and Milestones Work Together 104
The Budget Will be Part of Profit and Loss 105
Summary 108

Part 5: Financial Analysis 109

The financials aren't as hard as you think, particularly if you have the patience to follow the steps. A good plan includes sales, cash flow, profits, and related financials.

Chapter 13: About Business Numbers 111
Numbers Tell the Story 112
A Graphical View 119
Linking the Numbers 120
Summary 120
Chapter 14:The Bottom Line 121

Chapter 15: Cash is King **125**
Basic Cash Planning Example 125
A More Realistic Example 127
Cash Flow Breakdown 128
Understanding Cash Flow 134
Summary 134
Chapter 16: Finish the Financials **135**
The Balance Sheet 135
Business Ratios 137
Break-even Analysis 140
Refine and Polish the Financials 141
Summary 141

Part 6: Strategy and Tactics **143**

Strategy is focus. You also need tactics to implement the strategy, and tactics require concrete milestones and well defined management responsibilities.

Chapter 17: Strategy is Focus **145**
Define Overall Strategy 145
Define Marketing Strategy 148
Define Sales Strategy 149
Summary 149
Chapter 18: Make it Real **151**
Implementation Milestones 151
Manage Your Summaries 152
Long-Term Plan 153
Summary 153
Chapter 19: Plan for Implementation **155**
Start With a Good Plan 155
Track and Follow Up 156
Keep Your Plan Alive 156
Measure a Plan by its Implementation 166
Summary 166

304

Part 7: Following Up 167

Ultimately, the impact of your plan depends on how you manage and implement it, how it's presented, and to whom.

Chapter 20: Print and Publish 169
- Publishing = Management 169
- Final Edit 170
- Presentation 170
- Related Documents 170
- Summary 170

Chapter 21: Getting Financed 171
- Time Value of Money, NPV, and IRR 171
- Small Business Financing Myths 175
- Where to Look for Money 175
- Words of Warning 180
- Submitting a Plan 180
- Summary 180

SAMPLE PLANS:
- Acme Consulting 181
- AMT, Inc. 207

HURDLE: Workbook 243

Appendix A: Glossary 299

Appendix B: Index 309

305

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Part 1:

FUNDAMENTALS

Ch 1: It's About Results

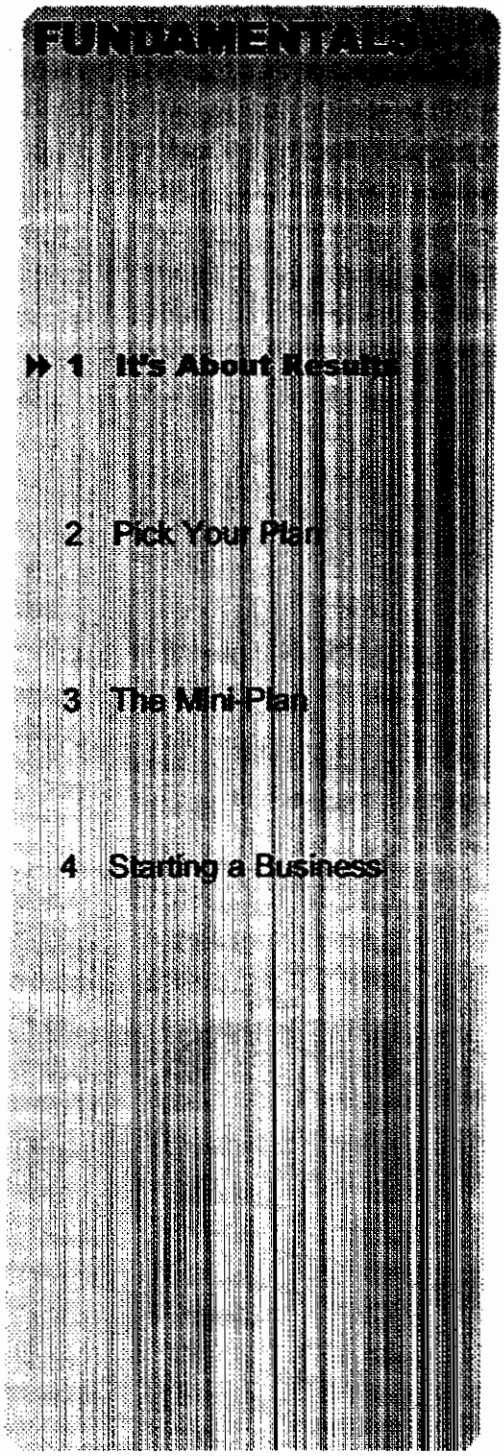
Ch 2: Pick Your Plan

Ch 3: The Mini-Plan

Ch 4: Starting a Business

FUNDAMENTALS

As you start the planning process, begin with a general view of the whole project. Review your goals and consider your options.



Chapter 1:

IT'S ABOUT RESULTS

About 10 years ago, I was having lunch with Professor James March, a business school professor whose class I'd enjoyed a few years earlier, as a grad student. I was then in my late 30s, making my living mostly through business plan consulting. I'd had some successes. One of my plans was for a company that went from zero to more than $100 million of sales in four years. Apple Computer's Latin American group increased sales from $2 million to $27 million during the four years I'd done its annual plan. I'd had some failures too, but we won't mention those.

"So what is the value of a business plan?" Professor March asked at one point.

"Thousands of dollars," I answered. "Tens of thousands, in some cases."

"Wrong," he answered, to my shock. "Very wrong."

The value of a plan is the decisions it influences, he explained, and ultimately, how much money is in the bank as a result.

He was very right, although I was fairly smug about my successes and didn't like his response. And the underlying lesson is vital to this book.

309

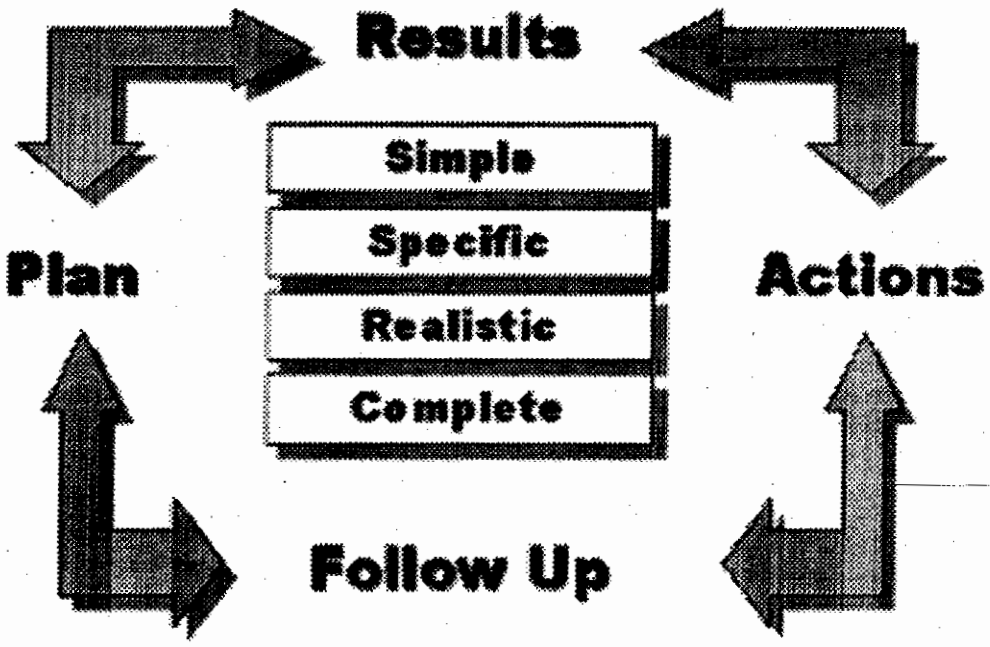
I've absorbed the idea into my work on business planning. Plans should be measured by results. No matter how well researched, beautifully written, or excellently presented, what really makes a difference is how it impacts the results of the business.

What Makes a Good Plan?

Illustration 1-1 shows a business plan as part of a process. You can think about the good or bad of a plan as the plan itself, measuring its value by its contents. There are some qualities in a plan that make it more likely to create results, and these are important. However, it is even better to see the plan as part of the whole process of results, because even a great plan is wasted if nobody follows it.

The plan depends on the human elements around it, particularly the process of commitment and involvement, and the tracking and follow up that comes afterward. I'm going to deal with those elements in coming chapters of this book. They are vital. But for now, let's look at the qualities that make the plan itself better or worse.

Illustration 1-1: Planning is a Process, Not Just a Plan



A business plan will be hard to implement unless it is simple, specific, realistic and complete. Even if it is all these things, a good plan will need someone to follow up and check on it.

Successful implementation starts with a good plan. There are elements that will make a plan more likely to be successfully implemented. Some of the clues to implementation include:

1. Is the plan simple? Is it easy to understand and to act on? Does it communicate its contents easily and practically?

2. Is the plan specific? Are its objectives concrete and measurable? Does it include specific actions and activities, each with specific dates of completion, specific persons responsible and specific budgets?

3. Is the plan realistic? Are the sales goals, expense budgets, and milestone dates realistic? Nothing stifles implementation like unrealistic goals.

4. Is the plan complete? Does it include all the necessary elements? Requirements of a business plan vary, depending on the context. There is no guarantee, however, that the plan will work if it doesn't cover the main bases.

Use of Business Plans

Preparing a business plan is an organized, logical way to look at all of the important aspects of a business. First, decide what you will use the plan for, such as to:

- Define and fix objectives, and programs to achieve those objectives.
- Create regular business review and course correction.
- Define a new business.
- Support a loan application.
- Define agreements between partners.
- Set a value on a business for sale or legal purposes.
- Evaluate a new product line, promotion, or expansion.

No Time to Plan? A Common Misconception

"Not enough time for a plan," business people say. "I can't plan. I'm too busy getting things done."

Too many businesses make business plans only when they have to. Unless a bank or investors want to look at a business plan, there isn't likely to be a plan written. The busier you are, the

more you need to plan. If you are always putting out fires, you should build fire breaks or a sprinkler system. You can lose the whole forest for too much attention to the individual trees.

Keys to Better Business Plans

- Use a business plan to set concrete goals, responsibilities, and deadlines to guide your business.
- A good business plan assigns tasks to people or departments and sets milestones and deadlines for tracking implementation.
- A practical business plan includes 10 parts implementation for every one part strategy.
- As part of the implementation of a business plan, it should provide a forum for regular review and course corrections.
- Good business plans are practical.

Business Plan "Don'ts"

- Don't use a business plan to show how much you know about your business.
- Nobody reads a long-winded business plan: not bankers, bosses, nor venture capitalists. Years ago, people were favorably impressed by long plans. Today, nobody is interested in a business plan more than 50 pages long.

A Business Plan Fable

Once upon a time there were three entrepreneurs who set out to seek their fortunes. Each of them developed a business plan.

The first business plan was built of straw. It was easy to complete, but it was mostly just puffery. For example, it had objectives like "being the best" and "excellence in customer satisfaction" without any way to measure results. It had a lot of talk, but few specifics. I'd almost say it was written like a sales or public relations piece, except that not even those can really afford to skip the hard facts.

The second business plan was built of sticks. It was built on what a venture capitalist I know calls "hockey stick" forecasts. You can probably guess what that means. I've seen a lot of them. Sales grow slowly in the past but the forecast shoots up boldly with huge growth rates, just as soon as something happens. Usually the something that is supposed to happen is investment, usually with other people's money, and as soon as

this plan gets the money, then wonderful things will happen. As one of my favorite teenagers would say, rolling her eyes with eloquent sarcasm, "yeah, right," and "oh, brother."

The third business plan was built of bricks. You can see them in Illustration 1-1. Bricks are specifics, especially "ownership", such as in specific job responsibilities, or specific people in charge of well-defined activities. Bricks are milestone dates, deadlines, budgets, and concrete, measurable objectives.

Then came the real world, as awesome as the big bad wolf in a similar fable. The real world was phone calls and daily routine. It was business problems and changes in economic environment, customers paying slower than expected, costs going up on one product, down on another. In business school they called it the RW, pronounced "are-dub." I won't say anything about huffing and puffing.

The real world blew the plan of straw apart in an instant. It was worthless, forgotten, lost somewhere in a drawer, never to be referred to again. Nobody remembered what it said. It was useless.

The real world blew the plan of sticks apart too, in an instant. Nobody had paid much attention anyhow, because the forecasts were so wildly optimistic. Nobody had been given responsibility, and nobody would have taken it. The plan was simply ignored. It was useless.

The plan of bricks, however, stood up to the real world. As each month closed, the plan of bricks absorbed plan-vs.-actual results. Managers looked at the variance. They made adjustments. Each manager kept track of milestones and budgets, and at the end of each month the actual results were compared to the plan results. Managers saw the performance of their peers. Changes were made in the plan—organized, rational changes—to accommodate changes in actual conditions. Managers were proud of their performance, and good performances were shared with all. And the company lived happily ever after.

Summary

Beyond specifics in the menus, please remember that your plan is yours. You can easily omit the company chapter, for example, in an internal plan, or the marketing or personnel chapters, for that matter. The plan is yours, and the choices are yours.

Business plans don't sell new business ideas to venture capitalists. Venture capitalists invest in people and ideas, not plans. A business plan, though necessary, is only a way to present information.

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FUNDAMENTALS

1 It's About Results

2 Pick Your Plan

3 The Mini-Plan

4 Starting a Business

Chapter 2:

PICK YOUR PLAN

As we noted in Chapter 1: It's About Results business planning is about results. Make the contents of your plan match your purpose. Don't accept a standard outline just because it's there.

In the United States business market, there is a certain standardization about business plans. You can find dozens of books on the subject, about as many websites, two or three serious software products, and courses in hundreds of business schools, night schools, and community colleges. Although there are many variations on the theme, a lot of it is standard.

What is a Business Plan?

A business plan is any plan that works for a business to look ahead, allocate resources, focus on key points, and prepare for problems and opportunities. Business existed long before computers, spreadsheets, and detailed projections. So did business plans.

Unfortunately, people think of business plans first for starting a new business or applying for business loans. They are also vital for running a business, whether or not the business needs new loans or new investments. Businesses need plans to optimize growth and development according to plans and priorities.

315

What is a Start-up Plan?

A very simple start-up plan is a bare-bones plan that includes a summary, mission statement, keys to success, market analysis, and break-even analysis. This kind of plan is good for deciding whether or not to proceed with an idea or venture, to tell if there is a business worth pursuing; but it is not enough to run a business with. By the way, we have a site where you can test this quick plan for yourself, free, on the web, at:

www.miniplan.com

Is There a Standard Business Plan?

A normal business plan, that follows the advice of business experts, includes a standard set of elements. Plan formats and outlines vary, but generally, a plan will include standard components such as descriptions of company, product or service, market, forecasts, management team, and financial analysis.

Your plan depends on your specific situation. If you're developing a plan for internal use only, not for sending out to banks or investors, you may not need to include all the background details that you already know. Description of the management team is very important for investors, while financial history is most important for banks. Make your plan match its business purpose.

What is Most Important in a Plan?

What's most important in a plan? It depends on the case, but usually it's the cash flow analysis and specific implementation details.

- Cash flow because it is both vital to a company and hard to follow. Cash is usually misunderstood as profits, and they are different. Profits don't guarantee cash in the bank. Lots of profitable companies go under because of lack of cash. It just isn't intuitive.

- Implementation details because that's what makes things happen. Your brilliant strategies and beautifully formatted planning documents are just theory unless you assign responsibilities, with dates and budgets, and lots of following up and tracking of results. Business plans are really about getting results, improving your company.

Can you Suggest a Standard Outline?

There are predictable contents of a standard business plan. For example, a business plan normally starts with an Executive Summary, which should be short and interesting. People almost always expect to see sections covering

316

the Company, the Market, the Product, the Management Team, Strategy, Implementation and Financial Analysis.

If you have the main components, the order doesn't matter that much, but here's the order I suggest.

1. Executive Summary: Write this last. It's just a page or two of highlights.

2. Company Description: Legal establishment, history, start-up plans, etc.

3. Product or Service: Describe what you're selling. Focus on customer benefits.

4. Market Analysis: You need to know your market, customer needs, where they are, how to reach them, etc.

5. Strategy and Implementation: Be specific. Include management responsibilities with dates and budgets. Make sure you can track results.

6. Management Team: Describe the organization and the key management team members.

7. Financial Analysis: Make sure to include at the very least your projected Profit and Loss and Cash Flow tables.

I don't recommend developing the plan in the same order you present it as a finished document. For example, although the Executive Summary obviously comes as the first section of a business plan, I recommend writing it after everything else is done. It will appear first, but you write it last.

This book, therefore, discusses the business plan in the order you develop a plan, rather than the order of the document outline.

Standard Tables and Charts

There are also some business tables and charts that are normally expected in a standard business plan.

Cash flow is the single most important numerical analysis in a plan, and should never be missing. Most plans will also have Sales Forecast and Profit and Loss statements. I believe they should also have separate Personnel listings, projected Balance sheet, projected Business Ratios, and Market Analysis tables.

I also believe that every plan should include bar charts and pie charts to illustrate the numbers.

The following table includes a complete standard business plan outline. It explains in detail where the tables, charts, and topics fall in a standard outline and where you can find the related discussions in this book.

Outline order and sequence in a standard business plan.	Where the process is covered in this book.
1.0 Executive Summary 1.1 Objectives 1.2 Mission 1.3 Keys to Success	Chapter 17, *Strategy is Focus,* helps you write the main summary. Chapter 3, *The Mini-Plan,* talks about Objectives, Mission, and Keys to Success.
2.0 Company Summary 2.1 Company Ownership 2.2 Company History (for ongoing companies) or Start-up Plan (for new companies. 2.3 Company Locations and Facilities	Chapter 5, *Describe Your Company,* covers the company text section in your business plan as well as the related tables, either the Start-up or the Past Performance table.
3.0 Products (or services, or both) 3.1 Product (or service, or both) Description 3.2 Competitive Comparison 3.3 Sales Literature 3.4 Sourcing 3.5 Technology 3.6 Future Products	This is in Chapter 6, *What You Sell.*
4.0 Market Analysis Summary 4.1 Market Segmentation 4.2 Target Market Segment Strategy *4.2.1 Market Needs* *4.2.2 Market Trends* *4.2.3 Market Growth*	We cover this in Chapter 9, *Know Your Market.* Chapter 11, *Market,* also includes the market analysis table and chart.
4.3 Industry Analysis *4.3.1 Industry Participants* *4.3.2 Distribution Patterns* *4.3.3 Factors of Competition* *4.3.4 Main Competitors*	This is all in Chapter 8, *The Business You're In.*

Outline order and sequence in a standard business plan (cont.).	Where the process is covered in this book (cont.).
5.0 Strategy and Implementation Summary 5.1 Strategy Pyramids 5.2 Value Proposition 5.3 Competitive Edge 5.4 Marketing Strategy *5.4.1 Positioning Statement* *5.4.2 Pricing Strategy* *5.4.3 Promotion Strategy* *5.4.4 Marketing Programs*	Much of this is covered in Chapter 17, *Strategy is Focus*. Chapter 18, *Make it Real*, also covers the recommended Milestones table. Implementation and plan-vs.-actual analysis comes up again in Chapter 19, *Plan for Implementation*.
5.5 Sales Strategy *5.5.1 Sales Forecast* *5.5.2 Sales Programs* 5.6 Milestones	The sales forecast discussions and the forecast itself are all the subject of this book's Chapter 10, *Forecast Your Sales*.
6.0 Management Summary 6.1 Organizational Structure 6.2 Management Team 6.3 Management Team Gaps 6.4 Personnel Plan	Chapter 7, *Management Team*, covers this text and the Personnel Plan table.
7.0 Financial Plan 7.1 Important Assumptions 7.2 Key Financial Indicators 7.3 Break-even Analysis 7.4 Projected Profit and Loss 7.5 Projected Cash Flow 7.6 Projected Balance Sheet 7.7 Business Ratios 7.8 Long-term Plan	Chapter 14, *The Bottom Line*, covers the Profit and Loss and General Assumptions tables. Chapter 3, *The Mini-Plan*, includes the Break-even table as part of the Initial Assessment. You deal with Cash Flow and the Cash Flow table in Chapter 15, *Cash is King*, the Balance Sheet table in Chapter 13, *About Business Numbers*, the Business Ratios table in Chapter 16, *Finish the Financials*, and the Long-term plan in Chapter 18, *Make it Real*.

Form Follows Function

However, as we noted in Chapter 1: It's About Results, business planning is about results. Make the contents of your plan match your purpose and adjust the outline to match your type of plan.

For example, if you are developing an internal plan for company use, you don't need to include a section about the company. If your plan focuses on well-known existing products or services and is intended for internal use only, you may not even need to include the details about the products.

Another example that comes up frequently is the level of detail required in your market analysis. Business plans looking for investors need to have some convincing market data, but a plan for a small local business, to be used mainly by a small group of people close to the company, may not need as much research. Is there an opportunity to improve the company and the plan by learning more about the market? Then do it. If not, it may be overkill.

Investor Summaries and Loan Applications

When a plan is used to back up a loan application or explain to potential investors, it may require a special summary document as well as a complete plan. Many investors like to see a brief summary, and a loan application doesn't always require a complete plan. If you develop your plan in the right way, you can use the summary paragraphs of the main sections—company, market, product, etc.—to create these specialized summary documents.

Timeframes: Is Three Years Enough?

Regarding the span or length of focus of a business plan—its timeframe—opinions vary. I believe a business plan should normally project sales by month for the next 12 months, and annual sales for the following two years. This doesn't mean businesses shouldn't plan for a longer term than just three years, not by any means. It does mean, however, that the detail of monthly forecasts doesn't pay off beyond a year, except in special cases. It also means that the detail in the yearly forecasts probably doesn't make sense beyond three years. Plan your business for 5, 10, and even 15-year timeframes; just don't do it within the detailed context of business plan financials.

Summary

Beyond my outline recommendations above, or the specifics in the menus of a program such as *Business Plan Pro*™, please remember that your plan is yours. You make the choices that best suit your needs.

FUNDAMENTALS

1 It's About Results

2 Pick Your Plan

» 3 The Mini-Plan

4 Starting a Business

Chapter 3:

THE MINI-PLAN

Start your business plan with a quick assessment. Even for an ongoing business, take the time to step away from the business and look at the basics. Do your business numbers make sense? One of my business school professors used to refer to this process as finding out "is there a there there?"

For a first look, consider your objectives, mission statement, and keys to success.

Objectives

Objectives are business goals. Set your market share objectives, sales objectives, and profit objectives. Companies need to set objectives and plan to achieve them.

Make sure your objectives are concrete and measurable. Be specific, such as achieving a given level of sales or profits, a percentage of gross margin, a growth rate, or a market share. Don't use generalities like "being the best" or "growing rapidly" as your objectives.

For example, "being the best" or "maximize customer satisfaction" cannot really be measured. Much better objectives would set measurable goals, such as holding gross margin to 25 percent as a minimum, or selling more than $3 million, or achieving six percent profit on sales and 10 percent return on equity.

321

If less tangible goals are critical to a plan, find a way to measure them. For example, if image and awareness are vital, then plan for statistically valid surveys to measure the improvements in image and awareness. You can also set goals for market share, and purchase research to measure the actual share. Or, if you want to focus on customer satisfaction, plan for a survey to quantify satisfaction or specify numerical objectives regarding returns or complaints.

Mission Statement

Use the mission statement to define your business concept. A company mission statement should define underlying goals (such as making a profit) and objectives in broad strategic terms, including what market is served and what benefits are offered.

What Business You Are In

Ask yourself what business you are in, and don't narrow yourself down. One of the classic business examples is the railroads, which lost a chance to expand in the twentieth century because they misdefined themselves. They thought they were in the business of running trains on tracks. They didn't understand they were in the business of transporting goods and people. When trucks and buses and highways grew, the railroads were left behind.

My company, Palo Alto Software, is not in the business of software development. It is in the business of helping people do their own business plans, by providing business know-how through software and documentation. The broader definition helps us understand what we're up to.

Customer Satisfaction

Leading experts in developing customer satisfaction look to a mission statement to define customer satisfaction goals. Developing customer care programs depends on spreading the idea and importance within a company. That should normally start with a statement included in your mission statement.

Workplace Philosophy

Some mission statements also define internal goals such as maintaining a creative work environment and building respect for diversity. Experts in employee relations look immediately to a mission statement for a definition of a company's stand on some of these fundamental issues.

Value-Based Marketing

Experts developed the value-based marketing framework to help companies understand their business better. This framework starts with a business value proposition, which states what benefits

a business offers, to whom, and at what relative price level. For example:

- This automobile manufacturer offers reliable, safe automobiles for families at a relative price premium.
- This fast food restaurant offers quick and consistent lunches at a low price.

Keys to Success

Focusing on what I call "keys to success" is a good idea for getting a better view of the priorities in your business. Just about any business imaginable is going to depend a lot on three or four most important factors. For example, in a retail business, the classic joke is that "location, location, and location" are the keys to success. In truth, that might be, for example, location, convenient parking, and low prices. A computer store's keys to success might be knowledgeable salespeople, major brands, and newspaper advertising.

Focus is very important, and the keys to success framework helps you develop focus. There is what I call a law of inverse focus. I can't prove it with detailed research but I've seen many times that, beyond three or four key items, the more items on a priority list, the less chance of implementation. Thinking about keys to success is a great way to focus on the main elements that make your business work.

Break-even Analysis

Next comes a simple Break-even Analysis table as shown in Illustration 3-1.

Illustration 3-1: Break-even Analysis

Monthly Units Break-even	1,222
Monthly Sales Break-even	$397,262
Average Per-Unit Revenue	$325.00
Average Per-Unit Variable Cost	$248.07
Estimated Monthly Fixed Cost	$94,035

The Break-even Analysis table calculates a break-even point based on fixed costs, variable costs per unit of sales, and revenue per unit of sales.

Make the following three simple assumptions:

- Average per-unit sales price (per-unit revenue):

  The price that you charge per unit. Take into account sales discounts and special offers. For non-unit based businesses, make the per-unit revenue $1 and enter your costs as a percent of a dollar.

323

- Average per-unit cost:

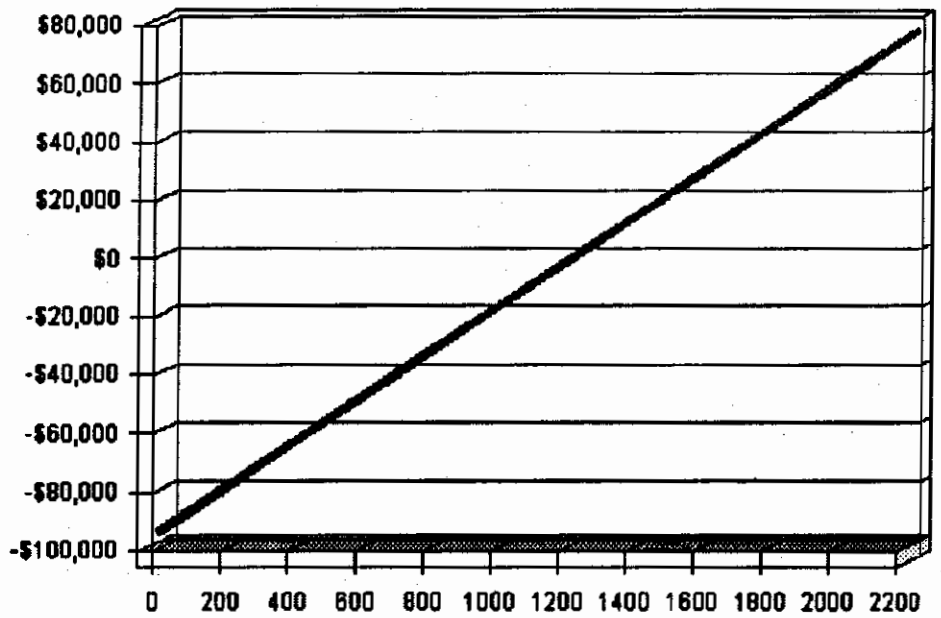
  The incremental cost of each unit of sale. If you are using a Units-Based Sales Forecast table (for manufacturing and mixed business types), you can project unit costs from the Sales Forecast table. If you are using the basic Sales Forecast table for retail, service and distribution businesses, use a percentage estimate. For example, a retail store running a 50% margin would have a per-unit cost of .5, and a per-unit revenue of 1.

- Monthly fixed costs:

  Technically, a break-even analysis defines fixed costs as costs that would continue even if you went broke. Instead, you may want to use your regular running fixed costs, including payroll and normal expenses. This will give you a better insight on financial realities.

Illustration 3-2 shows a Break-even chart. As sales increase, the profit line passes through the zero or break-even line at the break-even point.

Illustration 3-2: Break-even Chart



The Break-even chart shows that the company needs to sell approximately 1,200 units per month to break even.

PAGE PB

Illustration 3-2 shows that the company needs to sell approximately 1,200 units in order to cross the break-even line. This is a classic business chart that helps you consider your bottom-line financial realities. Can you sell enough to make your break-even volume?

Of course the break-even analysis depends on assumptions made for average per-unit revenue, average per-unit cost, and fixed costs. These are rarely exact assumptions.

Market Analysis

You don't need to do major market research for this initial market analysis. You may want to, and even need to, do real research later on, and we talk about this in detail in Chapter 9: Know Your Market (nowadays that is almost all Internet research). For now, however, you want to get a good educated guess about how many potential customers you might have.

What you want at this point is a reality check. You've already developed a quick break-even analysis that ties your initial business numbers to your required sales. So now you're going to look at how many customers you might have, so you can think about the importance of breaking even.

Develop a basic Market Analysis table. This table gives you a simple list of market segments. Illustration 3-3 shows a Market Analysis table. Each segment is a group of customers. Define the groups according to what needs you supply, demographic characteristics, buying habits, preferences, or whatever other classification system works for your plan. Fill in the total potential customers estimated and the annual growth rate expected for each segment.

Illustration 3-3: Market Analysis Table

Potential Customers	Growth	Total Customers
Consumer	2%	12,000
Small Business	5%	15,000
Large Business	8%	33,000
Government	-2%	36,000
Education	0%	19,000
Total	[illegible]	[illegible]

This analysis table lets you show the estimated total customer base and your projected growth rate for each group.

325

You can also use a Market Analysis chart as a visual guide to your market segments.

Pause for Reflection

At this point, you've defined your business, your financial break-even point, and your total potential market. How does your business look from this viewpoint? Does it make sense? Can you make the sales you need to break even? Is the market big enough? Are your projections realistic? Can you bring together the keys to success?

Especially for potential start-up companies, a moment of reflection is critical. Many people dream of starting a business, but that dream turns into a nightmare if the new business isn't successful.

Summary

If you think you can make your break-even numbers work, and you believe you have enough customers to make it, then go on to develop the plan. If not, either do more research and revise the idea, or give up and try something else.

FUNDAMENTALS

1 It's About Results

2 Pick Your Plan

3 The Mini-Plan

4 Starting a Business

Chapter 4:

STARTING A BUSINESS

It is dangerous to fall in love with the idea of starting your own business without understanding the realities.

Customers First

A business plan is not the most important single requirement for starting a business. Many other things are more important. For example:

- Customers: The first thing you need to start a business, maybe even the only thing you really need, is customers. It all starts with at least one customer.
- Customer needs: Your business must fulfill some type of customer need in order to be successful. Sometimes customer needs can be intangible, like security or prestige. Some customer needs seem frivolous, but they still matter. Make sure there is a market for your service or product. Your business will fail if it doesn't address a customer need.

327

Myths on Starting a Business

There are several myths about owning and operating a business that should be avoided at all costs. These common myths cause a lot of problems:

- The myth of "being your own boss": You are not your own boss when you own a business. Your customers are your boss. Your bank is your boss. Your fixed costs are your boss.

- The myth of "independence": Owning a business doesn't make you independent—not needing money makes you independent. As long as you need money, you can't be independent.

The folklore of business start-ups generally underestimates the risks. Imagine yourself missing mortgage payments when you can't cover your business costs and facing employees when you can't make payroll. Those negative images are also part of business ownership.

A Simpler Plan for Start-ups

Business advisors, experienced entrepreneurs, bankers, and investors generally agree that you should develop a business plan before you start a business. However, not all business plans are the same. You might develop a fairly simple plan first as you start a small business, and that might be enough for you. You can also start simple and then elaborate as you prepare to approach bankers or investors.

Don't let me, this book, business plan software, or any other source force you into doing more of a business plan than what you need. A plan can help you move forward, make decisions, and make your business successful. Not every plan is the same, not every business needs the same level of detail.

For a simple example, imagine a woman making jewelry at home and selling it at a local flea market on the weekend. A business plan could give her a chance to step back from the normal flow and look at ways to develop and improve the business. The planning process should help her understand her business. It should help her define what she wants from the business, understand what her customers want, and decide how to optimize her business on her own terms. She might benefit from developing a simple sales and expense forecast, maybe even a profit and loss, so she can plan how to use and develop her resources. She might not need to create detailed cash flow, balance sheet, and business ratios. A simple plan may be just what she needs to get going.

For an example of the very early stages of a plan, review the elements of starting a business plan in the section

PAGE PB

Chapter 3: The MiniPlan. This first stage of a plan focuses only on a few starter elements. The Mission Statement, Keys to Success, Market Analysis, and Break-even Analysis give you a critical head start toward understanding your business.

However, not all start-ups are that simple. Many of them need product development, packaging, retail fittings and signage, office equipment, websites, and sometimes months or even years of payroll before the sales start. Unless you're wealthy enough to finance these expenditures on your own, then you'll need to deal with bank loans or investors or both; and for that you'll need a more extensive business plan. Start-up company or not, the plan has to meet expectations.

One suggestion for getting started is to develop your plan in stages that meet your real business needs. A few key text sections might be enough to discuss the plan with potential partners and team members, as a first phase. You may well want to add a basic sales and expense forecast, leading to profit and loss, as next phase. Adding business numbers helps you predict business flow and match spending to income.

This might be an intermediate plan, incorporating a more extensive outline and business analysis as shown on the following page.

Ultimately, the choice of plan isn't based as much on the stage of business as it is on the type of business, financing requirements, and business objective. Here are some important indicators of the level of plan you'll need, even as a start-up:

- Some of the simpler businesses keep a plan in the head of the owner, but every business has a plan. Even a one-person business can benefit from creating a plan document with ideas written down, because the process is valuable. The exercise of producing a plan is a useful process.

- As soon as a second person is involved, the need for planning multiplies. The plan is critical for communicating values, goals, strategies, and detailed implementation.

- As soon as anybody outside the company is involved, then you have to provide more information. When a plan is for internal use only, you may not need to describe company history and product features, for example. Stick to the topics that add value, that make you think, that help support decisions. When you involve people outside the company, then you need to provide more background information as part of the plan.

Simplified Business Plan Outline

Outline	Topic	Table	Chart
1.0	Executive Summary	Highlights	
1.1	Objectives		
1.2	Mission		
1.3	Keys to Success		
2.0	Company Summary	Start-up	Start-up
3.0	Product Description		
4.0	Market Analysis Summary	Market Analysis	Market Forecast
4.1	Market Segmentation		
4.2	Target Market Segment Strategy		
4.3	Market Needs		
4.4	Competition and Buying Patterns		
5.0	Strategy and Implementation Summary		Annual Sales
5.1	Competitive Edge		
5.2	Sales Strategy	Sales Forecast	Monthly Sales
6.0	Management Summary		
7.0	Financial Plan		
7.1	Break-even Analysis	Break-even	Break-even
7.2	Projected Profit and Loss	Profit and Loss	
7.3	Projected Cash Flow	Cash Flow	Cash Flow

- For discussion purposes, text is enough to get a plan started. Try describing your mission, objective, keys to success, target market, competitive advantage, and basic strategies. How well does this cover your business idea?

- Can you live without a sales and expense forecast? Sometimes the one-person business keeps numbers in its (the owner's) head. However, it's much easier to use tools that can put the numbers in front of you, and add and subtract them automatically. That's where a plan helps.

- Do you really know your market? A good market analysis can help you see opportunities that might not otherwise be obvious. Understand why people buy from you. What are the needs being served? How many people are out there, as potential customers?

- Do you manage significant amounts of inventory? That makes your cash management more complicated, and usually requires a more sophisticated plan. You need to buy inventory before you sell it.

- Do you sell on credit? If you are a business selling to businesses, then you probably do have to sell on credit, and that normally means you have to manage money owed to you by your customers, called accounts receivable. Making the sale is no longer the same thing as getting the money. That usually requires a more sophisticated plan.

- Do you do your taxes on a cash basis, or accrual basis? If you don't know, and you are a very small (one person, maybe 2-3 people) business, then you're likely to be on a cash basis. That makes your planning easier. However, most businesses big enough to work with a CPA and have separate tax statements use accrual accounting because they want to deduct expenses as they are incurred, even if they aren't fully paid for. By the time you are using accrual accounting, you'll probably need more sophisticated cash flow tools, and a more extensive business plan.

- As you approach banks and other lending institutions, expect to provide more detail on personal net worth, collateral, and your business' financial position. Some banks will accept a very superficial business plan

as long as the collateral looks good. Others will demand to see detailed monthly projections. No bank can lend money on a business plan alone; that would be against banking law. But a good bank wants to see a good plan.

- If you're looking for venture investment, take a good look at your plan. Professional investors will expect your plan to provide proof, not just promises. They'll want to see market data, competitive advantage, and management track records. They'll want to see robust and comprehensive financial projections. True, you'll hear stories about investors backing new companies without a plan, but those are the exceptions, not the rule.

So, however you cut it, your business plan is very important, even at the early start-up stage, and even if you can keep it in your head. Before you purchase business stationery, telephones, or rent a location, you should do a business plan.

Realistic Start-up Costs

Businesses spend money before they ever open their doors. Start-up expenses are those expenses incurred

Illustration 4-1: Start-up Costs

Start-up Plan	
Start-up Expenses	
Legal	$50
Stationery, etc.	$100
Brochures	$450
Consultants	$100
Insurance	$50
Rent	$0
Research and Development	$0
Expensed Equipment	$500
Other	$500
Total Start-up Expense	**$1,750**
Start-up Assets Needed	
Cash Requirements	$500
Start-up Inventory	$250
Other Short-term Assets	$25
Total Short-term Assets	$775
Long-term Assets	$0
Total Assets	**$775**
Total Start-up Requirements	**$2,525**
Left to Finance:	**$0**
Start-up Funding Plan	
Investment	
Investor 1	$2,525
Investor 2	$0
Other	$0
Total Investment	**$2,525**
Short-term Liabilities	
Unpaid Expenses	$0
Short-term Loans	$0
Interest-free Short-term Loans	$0
Subtotal Short-term Liabilities	**$0**
Long-term Liabilities	$0
Total Liabilities	**$0**
Loss at Start-up	$1,750
Total Capital	$775
Total Capital and Liabilities	**$775**
Checkline	$0

Start-up table for a hypothetical home office resumé service.

before the business is running. Many people underestimate start-up costs and start their business in a haphazard, unplanned way. This can work, but is usually a harder way to do it. Customers are wary of brand new businesses with makeshift logistics.

Use a start-up worksheet to plan your initial financing. You'll need this information to set up initial business balances and to estimate start-up expenses, such as legal fees, stationery design, brochures, and others. Don't underestimate costs.

Illustration 4-1 reproduces a typical Start-up table for a home office, service business—in this case a resume writing service. The assumptions used in this illustration show how even simple, service-based businesses need start-up money.

Understand the Risks

I've spent many years as an entrepreneur and working with entrepreneurs. I understand and sympathize with the urge to create something, to build your own and make it work. However, I've also seen the disaster of the business start-up that absorbs more money than it should, and optimistic owners who keep dumping more money into a lost cause, digging themselves deeper into a hole instead of getting out of it.

The following illustrations outline the start-up costs for three different companies. The first, Illustration 4-2, shows actual numbers for a successful service company. Illustration 4-3 shows a successful product company, and Illustration 4-4 shows a failed product company.

Illustration 4-5 is a chart of all of these start-up companies. The lines indicate the cumulative balance for each business. This balance stands for how much money is spent or received, and how much money is at risk.

Both the successful and the failed product company launches look the same in the beginning. The successful launch turns upward and generates money, but the unsuccessful launch never does. The service company, in contrast, generates less money but also risks less money.

The chart in Illustration 4-5 makes two important points about money at risk in different kinds of businesses:

- Product businesses usually require more investment than service businesses.
- "Bootstrapping" (starting the business without start-up capital) is much harder for product businesses than service businesses.

Illustration 4-2: Successful Service Start-up

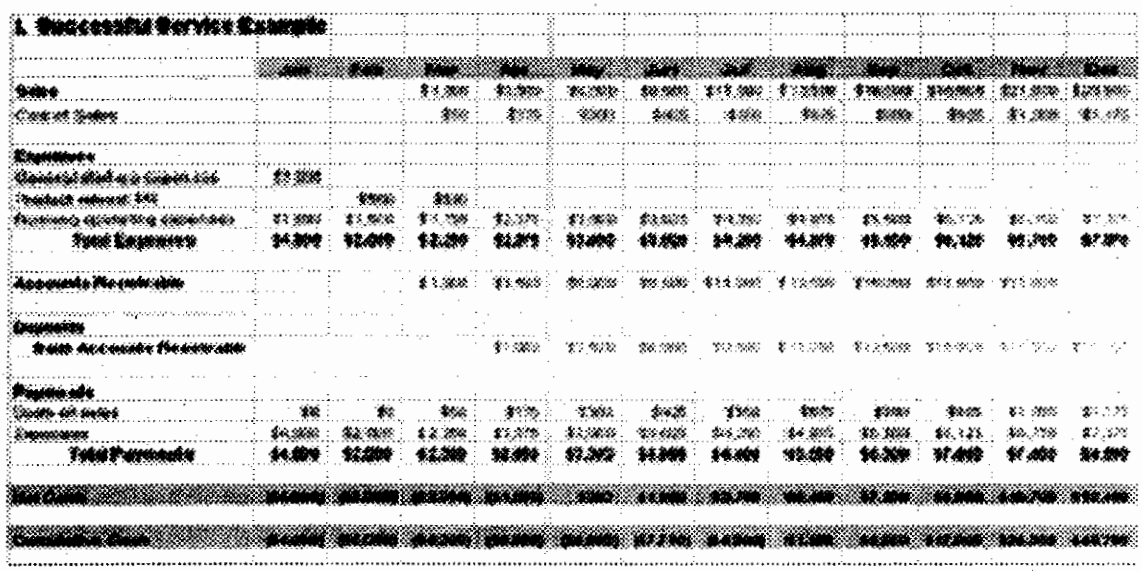


Illustration 4-3: Successful Product Start-up

II. Successful Product Example	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sales					$50,000	$75,000	$100,000	$125,000	$150,000	$150,000	$150,000	$150,000
Cost of Sales					$10,000	$15,000	$20,000	$25,000	$30,000	$30,000	$30,000	$30,000
Expenses												
General start-up expenses	$4,500											
Product work		$5,000	$5,000									
Packaging work			$5,000	$5,000								
Initial inventory build				$10,000								
Product release PR			$5,000	$5,000	$5,000							
Running operating expenses	$5,000	$5,000	$5,000	$10,000	$10,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000
Total Expenses	$9,500	$10,000	$20,000	$30,000	$15,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000
Accounts Receivable					$50,000	$125,000	$175,000	$225,000	$275,000	$300,000	$300,000	$300,000
Deposits from Accounts Receivable							$50,000	$75,000	$100,000	$125,000	$150,000	$150,000
Payments												
Costs of sales	$0	$0	$0	$0	$10,000	$15,000	$20,000	$25,000	$30,000	$30,000	$30,000	$30,000
Expenses	$9,500	$10,000	$20,000	$30,000	$15,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000
Total Payments	$9,500	$10,000	$20,000	$30,000	$25,000	$35,000	$40,000	$45,000	$50,000	$50,000	$50,000	$50,000
Net Cash	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	$10,000	$30,000	$30,000	$75,000	$100,000	$100,000
Cumulative Cash	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	$85,500	$185,500	$285,500

A table comparison of start-up numbers for one service and two product businesses.

Illustration 4-4: Failed Product Start-up

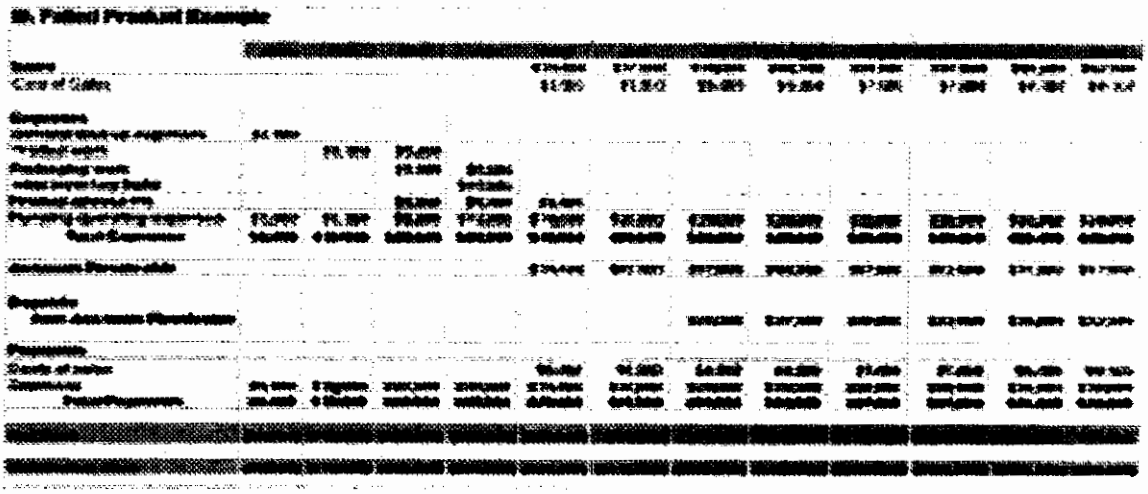
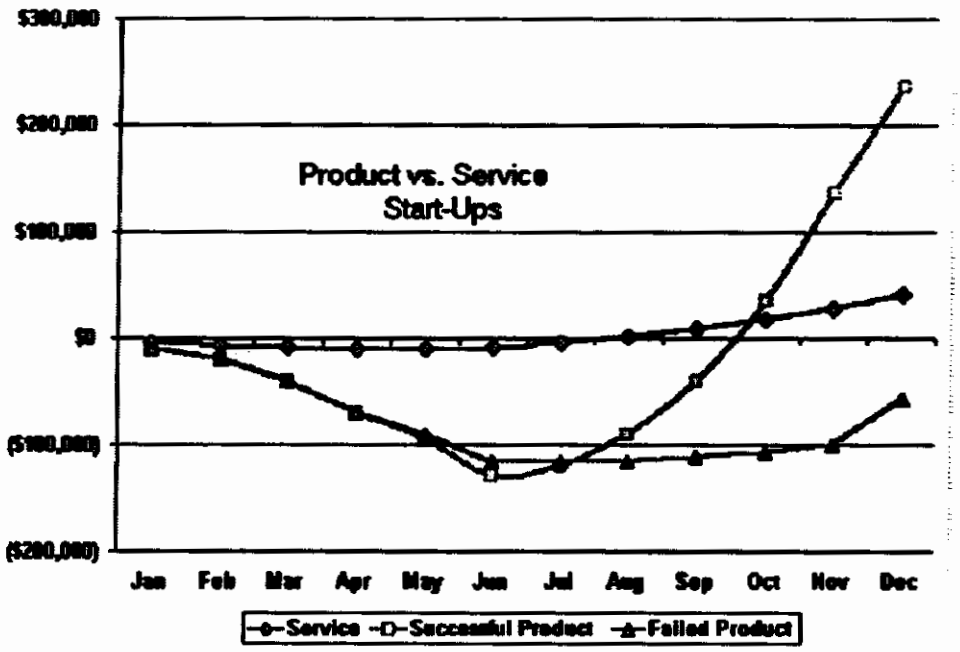


Illustration 4-5: The Start-up Curve and Risk to Investment



The lines show the cumulative cash positions for a start-up product company and a start-up service company. The product company risks more than the service company.

385

Friends and Family Funding

If I could make only one point with budding entrepreneurs, it would be that you should know what money you need, and understand that it is at risk. Don't bet money you can't afford to lose. Know how much you are betting.

I'll always remember a talk I had with a man who had spent 15 years trying to make his sailboat manufacturing business work, achieving not much more than aging and more debt. "If I can tell you only one thing," he said, "it is that you should never take money from friends and family. If you do, then you can never get out. Businesses sometimes fail, and you need to be able to close it down and walk away. I wasn't able to do that."

The story points out why the U.S. government securities laws discourage getting business investments from people who aren't wealthy, sophisticated investors. They don't fully understand how much risk there is. If your parents, siblings, good friends, cousins, and in-laws will invest in your business, they have paid you an enormous compliment. Please, in that case, make sure that you understand how easily this money can be lost, and that you make them understand as well.

Although you don't want to rule out starting your company with investments from friends and family, don't ignore some of the disadvantages. Go into this relationship with your eyes wide open.

Licenses, Permits, and Legal Entities

See an Attorney

Make sure you know which legal steps you must take to be in business. I'm not an attorney, and I don't give legal advice. I do strongly recommend working with an attorney to go through the details of your company's legal establishment, licenses, and other items covered here. By including this information in this book, I don't mean to imply you should do it yourself.

The trade-offs involved in incorporation vs. partnership vs. other forms of business are significant. Small problems developed at the early stages of a new business can become horrendous problems later on. The cost of simple legal advice in this regard is almost always worth it. Starting a company should not involve a major legal bill except in special cases. Don't skimp on legal costs.

Licenses and Permits are Usually Local Issues

It's hard to generalize on licenses and permits, because some of these depend on where you are, and some depend on what you do. When in doubt, you should check with local sources. If you don't want to go straight to the local government and ask your questions directly, then ask at a Chamber of Commerce, or Small Business Development Center (SBDC).

For example, many cities have zoning laws that define where you can put retail stores, office space, and industries. Few of these affect the small home-based business, but it's not unusual to have zoning laws prohibit signs on lawns or houses.

Some types of businesses require local or state licenses. This depends on where you are, but businesses including daycare, hair care, food service, and of course bars and nighclubs often require special licenses.

Resale Licenses and Sales Taxes

In states that have sales tax, state authorities manage a system that sets reseller businesses into a special category, so they don't have to pay sales taxes on items they buy for resale. The required paperwork and the state offices that manage it are different in many states, so you'll have to ask state offices for your state as you establish your business.

Taxpayer ID and Employer Numbers

Employer ID numbers (EIN) are assigned by the IRS and state tax authorities. If you don't have employees and you haven't established a corporation, then your Social Security number is your federal taxpayer ID. If you've established a corporation or you have employees, then you must have a federal EIN, which is assigned by the federal IRS. In most states, the state assigns a separate state number.

The Business Entity

The pros and cons of different business formations are worth understanding. They vary by state -- this is not a good area for guesswork, and not a good place to save money, so please go through this with a local attorney you can trust. The following is for background information.

Although the details vary, it starts with the choice between sole proprietorship, partnership, corporation, or the more trendy Limited Liability Company, LLC. Within the corporation classification you have additional choices, between the standard corporation or the small business S corporation.

The Simplest Form is the Sole Proprietorship

The simplest form is the sole proprietorship. Simply put, your business is a sole proprietorship if you don't create a separate legal entity for it. This is true whether you operate it in your own name, or under a trade name. If it isn't your own name, then you register a company name as a "Fictitious Business Name," also called a DBA ("Doing Business As"). Depending on your state, you can usually obtain this through the county government, and the cost is no more than a small registration fee plus a required newspaper ad, for a total of less than $100 in most states.

The main disadvantage of the sole proprietorship is the lack of a separate entity, which means you have personal responsibility for it. If the business fails then its creditors can go after your personal assets.

Tax treatment is quite simple, your profit and loss goes straight through to your personal taxes. Your business income is normally on Schedule C of your tax return. This can be good or bad for your tax situation, depending on where you stand with other income.

Partnerships

Partnerships are harder to describe because they change so much. They are governed by state laws, but a Uniform Partnership Act has become the law in most states. That act, however, mostly sets the specific partnership agreement as the real legal core of the partnership, so the legal details can vary widely. Usually the income or loss from partnerships pass through to the partners, without any partnership tax. The agreements can define different levels of risk, which is why you'll read about some partnerships that have general partners and limited partners, with different levels of risk for each. The agreement should also define what happens if a partner withdraws, buy and sell arrangements for partners, and liquidation arrangements if that becomes necessary.

If you think a partnership might work for your business, make sure you do this right. Find an attorney with experience in partnerships, and check for references of present and past clients. This is a complicated area and a mistake in the agreement will cause a lot of problems.

Corporations

Corporations are either the standard C corporation or the small business S corporation. The C corporation is the classic legal entity of the vast majority of successful companies in the United States. Most lawyers would agree that the C corporation is the structure that provides the best shielding from personal liability for owners, and provides the best non-tax benefits to owners. This is a separate legal entity, different from its owners, which pays its own taxes. Most lawyers would also probably agree that for a company that has ambitions of raising major investment capital and eventually going public, the C corporation is the standard form of legal entity.

The S corporation is used for family companies and smaller ownership groups. The clearest distinction from C is that the S corporation's profits or losses go straight through to the S corporation's owners, without being taxed separately first. In practical terms, this means that the owners of the corporation can take their profits home without first paying the corporation's separate tax on profits, so those profits are taxed once for the S owner, and twice for the C owner. In practical terms the C corporation doesn't send its profits home to its owners as much as the S corporation does, because it usually has different goals and objectives. It often wants to grow and go public, or it already is public. In most states an S corporation is owned by a limited number (25 is a common maximum) of private owners, and corporations can't hold stock in S corporations, just individuals.

Corporations can switch from C to S and back again, but not often. The IRS has strict rules for when and how those switches are made. You'll almost always want to have your CPA, and in some cases your attorney, guide you through the legal requirements for switching.

LLC (Limited Liability Company)

Be careful with this one, because the LLC form is different for different states, with advantages in some states that aren't relevant in others. An LLC is usually a lot like an S corporation, a combination of some limitation on legal liability and some favorable tax treatment for profits and transfer of assets. This is a newer form of legal entity, and often harder to establish than a corporation.

Why would you establish an LLC instead of a corporation? That's a tough legal question, not one we can answer here. In general, the LLC has to be missing two of the four characteristics of a corporation (limited liability, centralized management, continuity of life, and free transferability of ownership interest). Still, with the advisability and

advantages varying from state to state, here again, this is a question to take to a good local attorney with small business experience.

Business Names, Trademarks, Copyrights, etc.

The two concerns for start-up business names are the legal requirements, and the commercial use. We are talking about the name of your business, in this section, not your trademarks, or service marks, logos, or slogans. We are not attorneys, we do not give legal advice, so be sure to check with an attorney early on as you build your business. Trademark law protects product names, logos, trade names, even some slogans as trademarks or service marks. Copyright law protects works or art, fiction, movies, art, sculpture, and other creative works. Business law, however, does not fully guarantee you the exclusive use of your business name. To get close to exclusivity, you have to be first, you have to be national, and you have to be alert.

Owning and Establishing a Business Name

The most common misunderstanding about business names is about registering, protecting, and reserving business names. You can't reserve a business name completely, you can't have exclusive use. Think of a business name as a lot like a personal name, in that the first or oldest John Smith cannot claim exclusive use of that name. He can't make all the other John Smiths change their names. So too, the first Smith's Restaurant can't stop all other Smith Restaurants from using that same name. McDonald's Hamburgers can't make McDonald's Hardware Store change its name, and McDonald's Hardware Store in Manhattan can't sue McDonald's Hardware Store in San Francisco.

However, just as you have rights to your own identity, so does your company. One John Smith can sue another John Smith for using his identity, having bills sent to the wrong address, or purposely confusing people. McDonald's Hamburgers can sue just about anybody trying to use McDonald's for a business selling fast foods.

The confusion starts because business names are registered by different authorities in different places, and on different levels.

- The first and simplest business name is your own name, which might be enough for John Smith using Smith Consulting or hosting Smith's Restaurant. This kind of business name normally requires no additional paperwork, although most business owners end up registering a name anyhow to establish their legal claim to it.

- The second normal common level of business names is called DBA (for "Doing Business As") or Fictitious Business Name, which gives an individual the right to operate under a business name with signs, bank accounts, checks, and so on. These are generally registered and legalized by county governments within states. There might be a McDonald's Hardware Store as a DBA in many counties within a given state, and across many different states. To register a business with a fictitious business name, call your county government for details. You can expect that you'll have to visit an office in the county government, pay a fee of less than $100, and do some legal advertising, also less than $100, probably using forms you can fill out in the same office. Somebody will probably look up the registry to make sure that yours is the first business in the county with that name. Details will actually vary depending on which county you're in.

- The third level is the corporation, regardless of its various corporate entities. Whether they are S Corporations, C Corporations, LLCs, or whatever, a corporation is registered at the state level and no two can have the exact same name in each state. However, there is no guarantee that there won't be many businesses registered as McDonald's Hardware Store in several counties in a state, and a corporation registered as McDonald's Hardware Corporation. This kind of duplication happens. To establish a corporation, you can use national services such as

  www.mycorporation.com,

  or a local attorney. The corporate forms will go to the state, and details will depend on which state you're in.

Even though duplicate business names are very possible, and quite common, you do still have the right to protect and defend you own business name, once you've built the business around it. The key to this is confusion and confusing identity. As we said above, one John Smith can sue another John Smith for purposely confusing their identities. So too, McDonald's Hamburgers can and should sue anybody who starts a new restaurant named McDonald's serving fast foods.

On this point, when one business is confused with another, being first matters. When somebody tries to establish a second McDonald's Hardware where it would confuse people with the first, then the first McDonald's has a legal right to prevent it. If the second store puts up a sign, then the first store should take quick legal action to stop it. The longer the first store ignores the second, the better the case of the second store. When the whole mess goes to court, the first one to use the name is likely to win, but if the first one sat quietly while the other one built the name, then there is more doubt. An existing business should always watch out for people using the same or confusingly similar names, because the sooner it complains, the better for its legal arguments.

Researching Whether a Name Is Available

So you see you can't absolutely guarantee that nobody has the name you want, but you can at least try. The fastest and simplest way to start researching a name is to do an Internet search. Search about half a dozen of your favorite searchers and see whether or not the name you're considering is already taken. You don't want to name a business with a name that can cause problems later, because it confuses you with other businesses. That's obvious, but how do you research a name to make sure there won't be a conflict? There is no single sure way, but here are some suggestions:

- Search the Web. Start with your favorite searches and see whether anything turns up on the company name you're considering. You can also go to the U.S. Patent and Trademark Office website

  www.uspto.gov/

  or KnowX.com

  www.knowx.com

  or similar searcher sites.

- Search the Internet domain names. There are several searchers that offer access to the "whois" database of Internet sites. The most traditional site for this is the one at Network Solutions

www.networksolutions.com/cgi-bin/whois/whois

- See an attorney. Since you probably want to talk to an attorney about the correct business entities and other start-up matters, you may also ask your attorney about checking on business names. Generally you want to do your own check first to catch any obvious conflicts.

Ultimately, you really protect your business name only by using it. Corporations are registered by states, and factitious business names are registered in counties. Registering a name doesn't really protect it though, because the same name could legally exist in many other states, many other counties.

You could be Acme Corporation in Illinois and legally own that corporation in that state, but there could be another Acme Corporation in every other state, and every one of them is legal until you win a lawsuit proving that they are trading on the commercial interests you own. When you really get protection is when you use that name, and therefore when you find somebody else using it you can prove that you had it first, so they are trading on your name. There are lots of McDonald's restaurants around, and McDonald's can't stop them from using that name if they had it early enough, and especially if they aren't pretending to be a fast food hamburger joint. The attempt to confuse is very important.

Choosing a Business Name

The choice of a business name is very important, worth taking time to develop. Don't end up with a name that you can't live with. Look for something that describes your business, is easy to explain, fits on the signs, and works.

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Part 2:

Tell Your Story

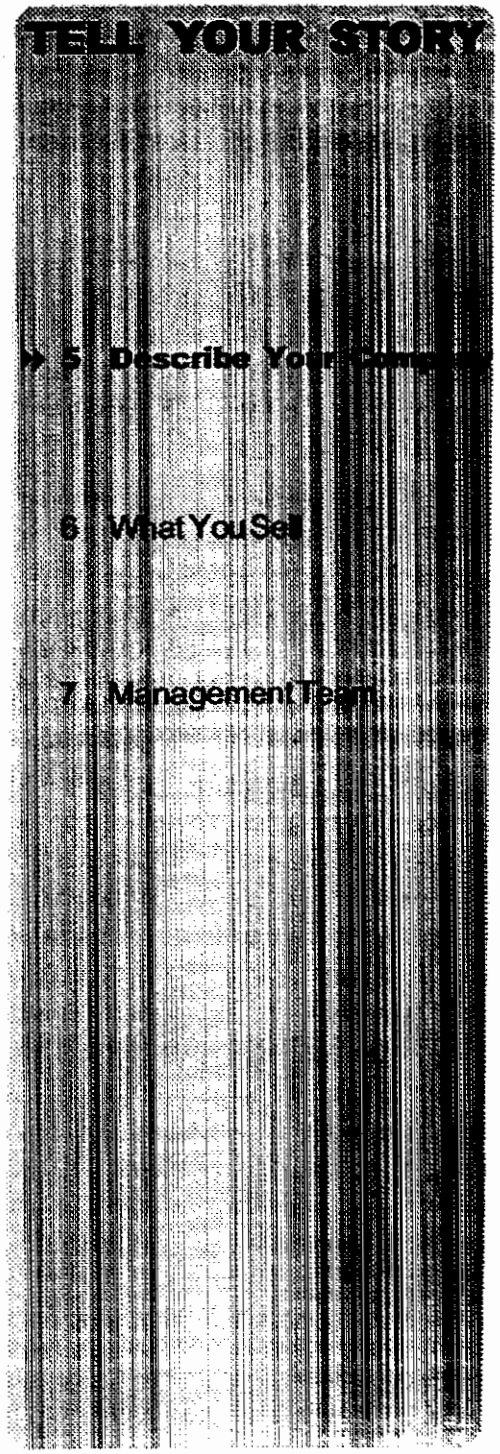
Ch 5: Describe Your Company

Ch 6: What You Sell

Ch 7: Management Team

TELL YOUR STORY

A standard business plan includes company background information, history, and basic descriptions.



Chapter 5:

DESCRIBE YOUR COMPANY

This is a good time to explain your company and some of its underlying strategy, such as competitive edge and value proposition, as well as establishing base-line numbers for your plan.

I find switching modes like this, from numbers to text and back, helps keep the process fresh as you develop your plan. This chapter will cover a table or two, either past performance or start-up costs, depending on your specific plan.

You're probably noticing by now that developing a business plan doesn't really happen in a straight logical order of steps. It isn't really a sequential process. For example, you looked at your market numbers first while doing the Initial Assessment, Chapter 3: The MiniPlan, and will again as you focus on more detail for the Market Analysis topic. You'll probably visit those numbers again as you do the Industry Analysis. In coming chapters you'll project your sales, personnel, and profits, but you'll probably have to revise those numbers when you look at your balance sheet and cash flow.

If you are starting a business, please go now to Chapter 4: Starting a Business dedicated to issues in starting a business. I don't want to interrupt the flow of the plan with that discussion at this point, particularly for those who are working on an ongoing business. However, if you are starting a business, and haven't read Chapter 4, please read that chapter now and then return here.

Company Information

As discussed earlier in Chapter 2: Pick Your Plan, my recommended business plan outline includes a chapter topic on your company, right after the Executive Summary. I pointed out then that you may not need to include this chapter if you are writing an internal plan. However, any outsiders reading your plan will want to know about your company before they read about products, markets, the rest of the story.

Summary Paragraph

Start the chapter with a good summary paragraph that you can use as part of a summary memo or a loan application support document. Include the essential details, such as the name of the company, its legal establishment, how long it's been in existence, and what it sells to what markets.

Legal Entity Ownership

In this paragraph, describe the ownership and legal establishment of the company. This is mainly specifying whether your company is a corporation, partnership, sole proprietorship, or some other kind of legal entity, such as a limited liability partnership. You should also explain who owns the company, and, if there is more than one owner, in what proportion.

If your business is a corporation, specify whether it is a C (the more standard type) or an S (more suitable for small businesses without many different owners) corporation. Also, of course, specify whether it is privately owned or publicly traded.

Many smaller businesses, especially service businesses, are sole proprietor businesses. Some are legal partnerships. The protection of incorporating is important, but sometimes the extra legal costs and hassles of turning in corporate tax forms with double-entry bookkeeping are not worth it. Professional service businesses, such as accounting or legal or consulting firms, may be partnerships, although that mode of establishment is less common these days. If you're in doubt about how to establish a start-up company, consult a business attorney.

Locations and Facilities

Briefly describe offices and locations of your company, the nature and function of each, square footage, lease arrangements, etc.

If you are a service business, you probably don't have manufacturing plants anywhere, but you might have Internet services, office facilities, and telephone systems that are relevant to providing service. It is conceivable that your Internet connection, as one hypothetical case, might be critical to your business.

If you're a retail store, then your location is probably a critical factor, so explain the location, traffic patterns, parking facilities, and possibly customer demographics as they relate to the specific location (your Market Analysis goes elsewhere, but if your shopping center location draws a particular kind of customer, note that here).

If you are manufacturing, then you may have different facilities for production, assembly, and various offices. You may have manufacturing and assembly equipment, packing equipment, docks, and other facilities.

Depending on the nature of your plan, its function and purpose, you may want to include more detail about facilities as appendices attached to your plan.

For example, if your business plan is intended to help sell your company to new owners, and you feel that part of the value is the facilities and locations, then you should include all the detail you can. If you are describing a manufacturing business to bankers or investors, or anybody else trying to value your business, make sure you provide a complete list and all necessary detail about capital equipment, land, and building facilities. This kind of information can make a major difference to the value of your business. On the other hand, if your business plan is for internal use in a small company with a single office, then this topic might be irrelevant.

Think Strategically

One of the most valuable benefits of developing a business plan is thinking in depth about your company. You started that as part of Chapter 3: The MiniPlan, as you entered drafts of your objectives, mission statement, and keys to success. A standard plan also includes sections in the strategy chapter that provide deep background for strategy. This is a good point for developing those texts.

Value Proposition

Value-based marketing is a useful conceptual framework. The value proposition is benefit offered less price charged, in relative terms. For example, the auto manufacturer, Volvo, has for years offered a value proposition based on the value of safety, at a price premium. A more detailed discussion of this framework can be found in Chapter 17: Strategy Is Focus.

Competitive Edge

So what is your competitive edge? How is your company different from all others? In what way does it stand out? Is there a sustainable value there, something that you can maintain and develop over time? The classic competitive edges are based on proprietary technology protected by patents. Sometimes market share and brand acceptance are just as important, and know-how doesn't have to be protected by patent to be a competitive edge.

For example, Apple Computer for years used its proprietary operating system as a competitive edge, while Microsoft used its market share and market dominance to overcome Apple's earlier advantage. Several manufacturers used proprietary compression to enhance video and photographic software, looking for a competitive edge.

PAGE PB

The competitive edge might be different for any given company, even between one company and another in the same industry. You don't have to have a competitive edge to run a successful business—hard work, integrity, and customer satisfaction can substitute for it, to name just a few examples—but an edge will certainly give you a head start if you need to bring in new investment. Maybe it's just your customer base, as in the case with Hewlett-Packard's relationship with engineers and technicians, or it's image and awareness, such as with Compaq. Maybe it is the quality control and consistency of IBM.

The most understandable of the competitive edges are those based on proprietary technology. A patent, an algorithm, even deeply entrenched know-how, can be solid competitive edges. In services, however, the edge can be as simple as having the phone number 1 (800) SOFTWARE, which is an actual case. A successful company was built around that phone number.

Baseline Numbers

While we're focusing on the company description, let's establish the starting numbers that form the basis of your cash flow and balance sheet in Chapters 13-16. For ongoing companies, your starting balance for the future is the last balance from the past.

350

Past Performance for Ongoing Companies

Past performance explained here is for ongoing companies. If you are a start-up business, skip to the section called Start-up Costs for Start-up Companies.

Illustration 5-1 shows a sample listing of recent financial results for an ongoing company. Generally three years is good enough. You should have these numbers as part of your standard business accounting.

Illustration 5-1: Past Performance Table

Sales	$3,773,889	$4,661,902	$5,301,056
Gross Margin	$1,189,495	$1,269,261	$1,127,588
Gross % (calculated)	31.52%	27.25%	21.27%
Operating Expenses	$752,083	$902,500	$1,052,917
Collection period (day	48	52	65
Inventory turnover	7	6	5
Cash			$55,432
Accounts receivable			$395,107
Inventory			$251,012
Other Short-term Assets			$25,000
Total Short-term Assets			$726,551
Capital Assets			$350,000
Accumulated Depreciation			$50,000
Total Long-term Assets			$300,000
Accounts Payable			$223,897
Short-term Notes			$90,000
Other ST Liabilities			$15,000
Subtotal Short-term Liabilities			$328,897
Long-term Liabilities			$284,852
Paid In Capital			$500,000
Retained Earnings			($161,[illegible])
Earnings			$74,852
Payment days			30
Sales on credit			$3,445,[illegible]

Important past performance items can be typed into the past performance worksheet. They are used for comparing past performance to projected future, and to establish your starting balances.

351

Ongoing companies need to include a summary of company history, as a topic in your text. If you are an ongoing company, then you'll need to present financial results of the recent past, and this text section is where you explain them.

Explain why your sales and profits have changed. If you've had important events like particularly bad years or good years, or new services, new locations, new partners, etc., then include that background here. Cover the founding of the company, important events, and important changes.

Your first consideration is the needs of your reader. This isn't a history assignment. Give the reader of the business plan the background information he or she needs to understand your business.

For your financial analysis as an ongoing company, you will want to make sure you have some very important highlights of your company's past financial performance, as shown in the previous table.

Start-up Costs for Start-up Companies

The start-up company should include a start-up table instead of the past performance table. Illustration 5-2 is a simple example.

Start-up Expenses

The first portion of the sample start-up table estimates start-up expenses. Make, sure first of all, that you understand expenses, which are different from assets. You can check with the glossary for a detailed definition of expenses, but basically your start-up expenses are like those shown in the example. Start-up expenses are only those expenses incurred before the start of the plan. If they come after the start of the plan, they belong in the profit and loss table in the appropriate month. In the example, the total is $18,350.

The table shows some common types of start-up expenses, such as legal costs, stationery, and brochures. One category that frequently generates questions is the so-called "expensed equipment," which is used for office equipment such as computers and telephones that the tax authorities allow a business to report as expenses. While these purchases might normally be assets, they are expensed because that reduces taxable income, and the government allows using them as expenses instead of assets.

Product development expenses occasionally cause confusion because some people want to make them assets, but they are almost always expenses. The trouble is that although you'd like to think of product expense as developing future assets, that's not the normal tax treatment.

Illustration 5-2: Start-up Table

Legal	$1,000
Stationery, etc.	$3,000
Brochures	$5,000
Consultants	$5,000
Insurance	$350
Expensed Equipment	$3,000
Other	$1,000
Cash requirements	$25,000
Other Short-term Assets	$7,000
Total Short-term Assets	$32,000
Long-term Assets	$0
Investment	
Investor 1	$20,000
Investor 2	$20,000
Other	$10,000
Unpaid Expenses	$350
Short-term Loans	$0
Interest-free Short-term Loans	$0
Long-term Liabilities	$0
Loss at Start-up	($18,350)
Total Capital	$31,650
Checkline	$0

Use the start-up worksheet to plan your initial financing.

Starting Assets

The second portion of the sample start-up table estimates the assets your business will have at start-up, including starting cash, inventory (except for service companies), and others. The example shows just two categories, cash and other short-term assets, because it was taken from a service company that had no starting inventory requirements. Office furniture, shelving and signage are often start-up assets. The total in the example is $32,000.

Don't confuse expenses and assets. Assets are goods and documents that have transferable value. Assets make the company's balance sheet look better. However, given a choice, most companies prefer to deduct their purchases as expenses rather than store them up as assets. For example, in the United States a computer purchase can be treated either as an asset or an expense, depending on conditions set forth in federal tax law. When you can choose, you normally want to expense your purchases because then you can deduct those expenses from income. This is why we have "expensed equipment" among the expenses.

Your starting cash is your most critical input. Don't expect to get it right the first time without adjustments. Normally you start by putting a simple educated guess into this cell, typing in an amount equal to what you think

should be your business checking account bank balance when you start. After that, you continue working with other tables in your plan, including sales forecast, personnel, and profit and loss, developing estimates for the values in those tables. If you are like most start-ups, as you refine your estimates you'll discover that your Cash Flow table has a negative balance. If you do have this negative balance, that's an indication of typical negative cash flow of start-up companies. To complete your plan, you'll have to go back to the Start-up table and increase the estimate for starting cash until the starting cash is enough to eliminate any negative balances in the cash flow projections for the following months. For example, if your cash flow indicates a negative balance of $-8,000 in the worst month, and your original estimate of starting cash was $15,000, then you would need to increase your estimated starting cash by $8,000 to cover the estimated deficit in the cash flow for the first few months. That would require a starting cash balance of $23,000 ($15K + $8K). In the example the starting cash is $25,000 instead of $23,000 because that's a round number and adds a slight cash buffer.

Ultimately the cash in the starting balance comes from the money you raise as loans and investments. If you need more cash, you need to raise more money. If you raise more money, then you need to increase your cash. The starting cash is often an important logical check, which you increase or decrease to make your balance correct. In the example, this company is raising $50,350 as a combination of loans and investments, and it has a total of $50,350 combined between start-up expenses and start-up assets, so its start-up table is correctly balanced. If it had raised $100,000, but you only had $50,350 in assets and expenses, then it would have lost $49,650 as accounted for funding. It could correct that situation by putting an extra $49,650 into its starting cash, which will increase your assets by $49,650.

> ***Important:*** *The cash you want to have in the bank at start-up is different from the money raised to start the business. The total money raised must match what was spent as expenses and assets. The cash at start-up is one of the assets. If you increase the amount of money raised, then you have to increase the start-up assets, usually by increasing the starting cash.*

You have to fund start-up expenses as well as starting assets.

The Start-up Requirements

The total start-up requirements, which is shown in the middle of the table, is the sum of start-up expenses and start-up assets. This is the money you've decided you need -- by

estimating start-up expenses and start-up assets -- to start the business. The "left to finance" amount shows up as a positive number only when you haven't provided enough funding to finance both expenses and assets. If it shows as a zero, you may have exactly the right amount, or too much.

You can tell that you have not accounted for all your incoming financing by looking at the "loss at start-up" value below. That should be the same number as total start-up expenses (except negative). If it is more negative than start-up expenses are positive, then you have brought in funds that haven't been accounted for. You can fix that by adding more money into your starting cash to account for the additional financing.

Start-up Funding

The third portion of the table contains your estimates for start-up funding, including investments, loans, and unpaid bills.

Investment is money that you or your investors sink into the business for good. You don't expect to get it back. Borrowing is money loaned to the business -- including loans as simple as purchases with credit cards and unpaid bills, called unpaid expenses. Loans can be unpaid expenses, short-term loans, or long-term loans. You need to invest and borrow enough money to equal the start-up expenses and start-up assets.

Loss at Start-up

Your loss at start-up should be exactly equal to your start-up expenses, but in the opposite direction. In the example, the start-up expenses total $18,350, so the loss at start-up should be exactly -$18,350. This is correct accounting. These are expenses taken against future income, and you have no income, so you have a loss. This is normal, since the vast majority of start-up companies start with a loss.

The rule of accounting is that assets are equal to investment plus loans. That is the same as capital being equal to assets minus liabilities, which is also your company's net worth. In order to make your balance correct as you start your company, you must recognize a loss at start-up that you can calculate as whatever number it takes to make capital equal to assets minus liabilities. For example, if you have $32,000 in assets and $350 in liabilities, your capital should be $31,650 (assets less liabilities). If you invested $50,000 in this case but your capital is only $31,650, then your loss at start-up has to be $18,350. The original $50,000 investment minus the $18,350 loss at start-up gives you the correct number for capital, $31,650 (assets are equal to capital plus liabilities). Your loss at start-up should normally be equal to start-up expenses, but it will be calculated as whatever number it takes to make investment and borrowing equal to start-up assets.

This makes your balance correct at the start.

If your loss at start-up is greater than your start-up expenses, this means that you haven't accounted for all of the money you raised in investments and liabilities. Remember, all the money has to be accounted for as either expenses or assets. If your loss at start-up is less than your start-up expenses, you haven't raised enough money to meet your funding requirements.

To reduce the loss at start-up, you can do several things:

- Reduce start-up expenses.
- Increase start-up assets. Normally you increase these by increasing cash. This happens often while you're developing a plan, because you discover cash needs by estimating future cash flow. Remember, when you decide you need more cash, you have to increase both funding and starting cash.
- Decrease investment or borrowing.

Remember, however, that you must show investment and borrowing to match the total of your start-up expenses and start-up assets. If you just add funding without changing the resulting cash, then every dollar of additional funding, beyond the amount required, increases your loss at start-up, which isn't correct.

Text: Start-up Explanations

Summarize your start-up plan. Explain the list of start-up expenses, which are expenses you make before you start the business in the first month. After the expenses, you list the assets you want to have in the company as it starts. For a service company that would be cash in the bank account, and possibly short-term assets such as equipment. Service companies rarely have starting inventory. Then you show how you intend to finance both the expenses and the initial assets, which usually means investment or borrowing.

Summary

You should include a good company description, especially if you're developing a plan to be shown to people outside the company.

Don't stop with just legal formation and history; include some strategic topics, such as competitive edge and value proposition.

You need one of two tables, either start-up or past performance, to establish a starting balance for your projected cash flow and balance sheet.

TELL YOUR STORY

5 Describe Your Company

▸▸ 6 What You Sell

7 Management Team

Chapter 6:

WHAT YOU SELL

This step in the process is much more important for a plan going to external readers, the banks or investors, than for internal plans. A complete business plan describes what you sell: either products, services, or both.

This part of the plan is mainly description. Sometimes it will include tables that provide more details, such as a bill of materials or detailed price lists. More frequently, however, this section is mainly text. It normally appears in the plan after the company description, but before the market analysis.

Start with a Summary Paragraph

Every section in a business plan should have an opening paragraph that describes the rest of the section. These summary paragraphs can also be used quite effectively in summary memos and loan application support documents. Readers may frequently skip the details, but only when they have an effective summary. It should be a clear and concise single paragraph that can be merged into the executive summary page. For this section, what do you sell, and to whom?

Detailed Description

The previous topic was the summary, so in this topic, you need to provide more detail. List and describe the products or services you sell. For each business offering, cover the main points, including what the product or service is, how much it costs, what sorts of customers make purchases, and why. What customer need does each product or service line fill? You might not want or need to include every product or service in the list, but at least consider the main sales lines.

It is always a good idea to think in terms of customer needs and customer benefits as you define your product offerings, rather than thinking of your side of the equation—how much the product or service costs, and how you deliver it to the customer.

As you list and describe your sales lines, you may run into one of the serendipitous benefits of good business planning, which is generating new ideas. Describe your product offerings in terms of customer types and customer needs, and you'll often discover new needs and new kinds of customers to cover. This is the way ideas are generated.

Competitive Comparison

Use this topic for a general comparison of your offering as one of several choices a potential buyer can make. There is a separate topic, in the market analysis section, for detailed comparison of strengths and weaknesses of your specific competitors.

In this topic you should discuss how your product lines and retail offerings compare in general to the others. For example, your outdoor store might offer better ski equipment than others, or perhaps it is located next to the slopes and caters to rental needs. Your jewelry store might be mid-range in price but well known for proficiency in appraisals, remounts, and renovation. Your hobby shop has by far the largest selection of model trains and airplanes.

In other words, in this topic you want to discuss how you are positioned in the market. Why do people buy from your business instead of from others in the same market? What do you offer, at what price, to whom, and how does your mix compare to others? Think about specific kinds of benefits, features, and market groups, comparing where you think you can show the difference. Describe the important competitive features of your products and/or services. Do you sell better features, better price, better quality, better service, or some other factor?

Sourcing and Fulfillment

In this section, you want to explain your product sourcing and the cost of fulfilling your service. Manufacturers and assemblers should present spreadsheet output showing standard costs and overhead. Distributors should present discount and margin structures. Service companies should present costs of fulfilling service obligations.

For example, sourcing is extremely important to a manufacturing company. Your vendors determine your standard costs and hold the key to continued operation. Analyze your standard costs and the materials or services you purchase as part of your manufacturing operation. Look for strengths and weaknesses.

Manufacturing companies want to have ample information about resource planning and sourcing of vital materials, especially if you are preparing a plan for outsiders, such as bankers or investors, or for business valuation. In this case, you may have additional documentation you can copy and attach as appendices, perhaps even contracts with important suppliers, standard cost breakdowns, bills of materials, and other information.

Where materials are particularly vital to your manufacturing, you might discuss whether second sources or alternative sources are available, and whether or not you use them or maintain relationships with them. This is also a good time to look at your sourcing strategy, and whether or not you can improve your business by improving your product sourcing.

But sourcing is not just for product-based companies. For example, a professional service company, such as an accounting practice, medical practice, law practice, management consulting firm, or graphic design firm, is normally going to provide the service by employing professionals. In this case, the cost is mainly the salaries of those professionals. Other service businesses are quite different. The travel agency provides a service through a combination of knowledge, rights, and infrastructure, including computer systems and databases. The Internet provider or telephone company provides a service by owning and maintaining a network of communications infrastructure. A restaurant is a service business whose costs are a combination of salaries (for kitchen and table waiting) and food costs.

Technology

In this section, explain how technology affects your business, the products you sell, the means you use to sell them, and the needs of the customers you serve.

In some cases this might be a change in scanning technology, retail point-of-sale systems, or even video displays. In others, technology changes the nature of the goods or services you sell, such as cellular phones or high-density videos that didn't even exist a few years ago. Do you want to include the Internet? Will a website change the way you do business?

Sometimes technology can be vital to a service company, such as the case of the Internet provider that uses wireless connections as a competitive edge, or the local company that offers conference rooms for video conferencing. An accounting practice might gain a competitive advantage from proprietary software or wide-area network connections to its clients. A medical laboratory might depend completely on certain expensive technologies for medical diagnostics. A travel agency might depend on its connection to an airline reservation system.

Technology can be critical to a manufacturing business in at least two ways: first, the technology involved in assembly or manufacturing, such as in the manufacture of computer chips; and second, the technology incorporated in your product, such as proprietary technology that enhances the value of the product. In either case, technology can be a critical competitive edge. If you are writing a plan for outsiders, then you need to describe the technology and how well or thoroughly you have the technology protected in your business, through contracts, patents, and other protection.

Technology might be a negative factor, something to be included in a plan because a threat should be dealt with. For example, that same travel agency that depends on a computerized reservation system might also note growing competition from Internet reservations systems available to consumers who prefer to buy direct.

Not all businesses depend on technology. Technology might also be irrelevant for your business. If so, you can delete this topic if it doesn't seem important.

Future Products

Now you want to present your outlook for future products or services. Do you have a long-term product strategy? How are products developed? Is there a relationship between market segments, market demand, market needs, and product development?

Here again, what you include depends on the nature of your plan. In some cases future products are the most important point for investors looking to buy into your company's future. On the other hand, a bank is not going to lend you money for product development or hopes for future products; so in a plan accompanying a loan application, there

would probably be much less stress on this point.

You may also need to deal with the issue of confidentiality. When a business plan includes sensitive information on future products, then it should be carefully monitored, with good documentation of who receives copies of the plan. Recipients might reasonably be asked to sign nondisclosure statements and those statements should be kept on file.

Sales Literature

It is generally a good idea to include specific pieces of sales literature and collateral as attachments or appendices to your plan. Examples would be copies of advertisements, brochures, direct mail pieces, catalogs, and technical specifications. When a plan is presented to someone outside the company, sales literature is a practical way to both explain your services and present the look and feel of the company.

If it is relevant for your business, you should also use this topic to discuss your present situation regarding company literature and your future plans. Is your sales literature a good match to your services and the image your company wants to present? How is it designed and produced? Could you improve it significantly, or cut the cost, or add additional benefits?

Summary

Depending on the purpose of your plan, you should provide good, practical information on the products or services you sell. Give your plan readers what they will need to evaluate the plan. Make sure they understand the need you serve, how well you satisfy that need, and why your customers buy from you instead of somebody else. Ideally, the descriptions in this chapter make your sales forecast seem realistic and even conservative.

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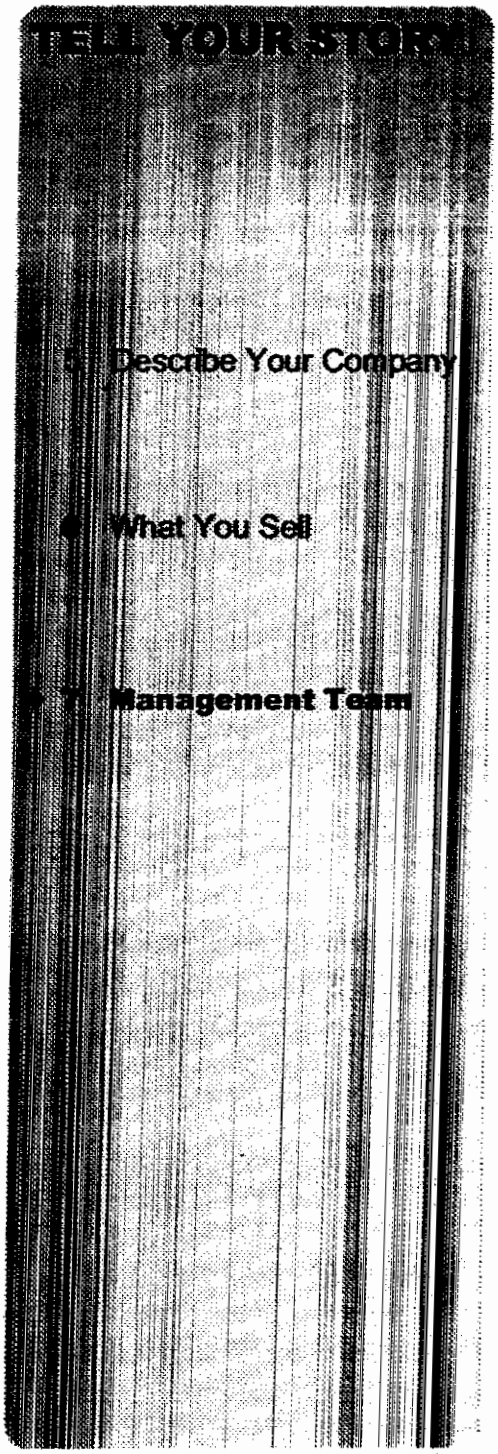


Chapter 7:

MANAGEMENT TEAM

A management team and bringing people together is a lot more than just resumes and venture capital. It is what makes a company work or not work.

Planning for People

For example: It's a sunny March Friday in Western Oregon, which is rare; so rare, in fact, that the boss decides to have office pizza for lunch.

The controller is a former history major, Phi Beta Kappa into grad school, who discovered midway through her 30s that she really liked making numbers work. As people gather in the main room around the pizza, she announces that all should enjoy her hair that day "because I am having a rare good hair day." Everybody laughs.

The head of tech support turns the attention to the "krinkly hair" of the marketing manager. Everybody laughs again. There are jokes about the pizza and the root beer.

The product manager demonstrates ballroom dancing steps in preparation for his upcoming wedding, and somebody thinks to turn the music-on-hold up, through the phones, as accompaniment.

The documentation manager emerges from her sunny office in the back and announces that she has a new couch in her office so people can escape from all the administration in the front.

These people seem happy. The technical support manager really likes to explain to people on the telephone; the documentation manager loves teaching and writing. The admin department includes a college student and a soccer mom, both of whom understand the accounting system very well and usually forgive it its flaws. The office manager, a former teacher, says managing this diversity is nothing compared to dealing with a classroom full of adolescents. The product manager and marketing manager both earned their business degrees while working part-time in tech support, and joined full-time as soon as they graduated. These people like their jobs and they like each other. They work together well.

Flash back to the same company four years earlier, with a totally different staff. Then, the controller was worried sick about the integrity of the computer system. The technical support person was tired of technical support and upset that the controller had a better computer. The sales manager spent half of her day settling disputes between the controller and the technical support person.

In other words, the jobs need to be done and the people need to match their job functions and preferences. A manufacturing company can't survive without a production manager, a software company can't live without technical support, and most companies also need office management and administration.

If we jump straight into personnel plans and resumes and business jargon related to the management team, we can inadvertently forget that there is something much more vital and alive than just looking good for investors. A company is where its employees come together most every day, for the major part of the day. If it isn't a good place to work, then it won't be successful. Keep this in mind as you plan your management and develop this part of your plan.

Cover the Bases in Text

Chapter Summary

The management chapter starts, like the other chapters, with a good summary. You may want to use that summary as part of a summary memo or loan application document, so cover the main points. Consider what you'd say about your management if you only had one or two paragraphs to say it.

Make sure you cover the basic information first. That would include how many employees the company has, how many managers, and how many of the managers are founders. Is your team

complete, or are there gaps still to be filled? Is your organizational structure sound, with job descriptions and logical responsibilities for all the key members?

Particularly with start-up companies, you may not have the complete team as you write the plan. In that case, be sure to point out the gaps and weaknesses and how you intend to fill them.

Organizational Structure

The organizational structure of a company is what you frequently see as an organizational chart, also known as an "org chart." If you have access to an organizational chart graphic, that works really well at this point. If not, you can just use the text to describe the organizational structure in words, without a chart.

Make sure you explain how job descriptions work and how the main company functions are divided up. Are your organizational lines drawn clearly? Is the authority properly distributed? Do you have jobs that include responsibility without authority? Do your resources seem in line with your organizational needs?

Management Backgrounds

List the most important members of the management team. Include summaries of their backgrounds and experience, using them like brief resumes. Describe their functions with the company. Resumes should be attached to the back of a plan.

Management Gaps

You may have obvious gaps in management, especially in start-up companies, but even in ongoing companies. For example, the manufacturing company without a production manager has some explaining to do, and the computer company without a service department has some problems. It is far better to define and identify a weakness than to pretend it doesn't exist. Specify where the team is weak because of gaps in coverage of key management functions. How will these weaknesses be corrected? How will the more important gaps be filled?

Other Considerations

Applicability depends on your company. Some questions that should be answered include: Do any managers or employees have "noncompete" agreements with competitors? Who is on your board of directors? What do the members contribute to the business? Who are your major stockholders? What is their role in management?

Develop Your Numbers

At this point you should normally include a personnel table to project personnel costs, including direct compensation and indirect costs. The indirect costs include vacation pay, sick pay, insurance benefits, education, and of course, payroll taxes and some other costs. There are different terms for all of this, but my favorite is "personnel burden," which is a cost over and above the direct wages and salaries.

Home Offices

If you are working as a sole proprietor in a home office, you should still include your own compensation as part of your business plan. What you pay yourself should be added into the profit and loss as an expense. However, in this case you don't really need to include payroll burden, because these additional expenses are irrelevant until you include additional employees.

Two Personnel Variations

As with the sales forecast in Chapter 10: Forecast Your Sales, a good personnel plan varies according to your business and business plan needs. You may want a simple list of names, titles, or groups, each of which is assigned a monthly cost. This model is shown in Illustration 7-1.

The simpler model totals all payroll only. It is perfectly appropriate for a lot of small businesses. You can use each of the lines in the table to describe specific individuals, or groups and departments. When you have the list complete, just

Illustration 7-1: Standard Personnel Plan

	Oct	Nov	Dec	1999	2000	2001
Partners	$12,000	$12,000	$12,000	$144,000	$175,000	$200,000
Consultants	$0	$0	$0	$0	$50,000	$63,000
Editorial/Graphic	$6,000	$6,000	$6,000	$18,000	$22,000	$26,000
VP Marketing	$5,000	$5,000	$5,000	$20,000	$50,000	$55,000
Sales People	$0	$0	$0	$0	$30,000	$33,000
Office Manager	$2,500	$2,500	$2,500	$7,500	$30,000	$33,000
Secretarial	$1,750	$1,750	$1,750	$5,250	$20,000	$22,000
Other	$0	$0	$0	$0	$0	$0
Subtotal	$27,250	$27,250	$27,250	$194,750	$377,000	$432,000

The standard personnel plan is a simple list of names, titles, or categories. The sum transfers into your profit and loss statement. This illustration shows the last three months and subsequent two years of a sample plan.

add up the totals for personnel costs in your Profit and Loss (Chapter 14: The Bottom Line). Multiply that total times your burden rate—say 15 or 20 percent—to calculate your personnel burden. The burden goes into the profit and loss as a separate line.

Illustration 7-2 shows the more detailed personnel plan that divides the rows into categories, such as sales and marketing, general and administrative, and so forth. The detailed model totals the planned payroll for each department, then calculates total payroll.

For either the simple or detailed personnel table, you also want to calculate a payroll burden as a percentage of the total, and make sure to include the personnel burden assumption in your list of general assumptions. Personnel burden is the extra costs of payroll taxes and benefits.

Illustration 7-2: Detailed Personnel Plan

Manager	$3,000	$3,000	$3,000	$36,000	$40,000	$42,000
Assistant	$1,000	$1,000	$1,000	$12,000	$13,000	$14,000
Technical	$2,000	$2,000	$2,000	$24,000	$27,500	$27,500
Fulfillment	$1,500	$1,500	$1,500	$18,000	$22,000	$50,000
Manager	$6,000	$6,000	$6,000	$72,000	$76,000	$85,000
Technical sales	$5,000	$5,000	$5,000	$60,000	$63,000	$80,000
Salesperson	$2,500	$2,500	$2,500	$30,000	$55,000	$64,000
Salesperson	$2,500	$2,500	$2,500	$30,000	$50,000	$55,000
President	$5,500	$5,500	$5,500	$66,000	[illegible]	$85,000
Finance	$0	$0	$0	$0	$29,000	$30,000
Admin Assistant	$2,000	$2,000	$2,000	$24,000	$26,000	$28,000
Clerical	$0	$0	$0	$0	$0	$15,000
Programming	$3,000	$3,000	$3,000	$36,000	$40,000	$44,000
Other technical	$0	$0	$0	$0	$30,000	$33,000
Other	$0	$0	$0	$0	$0	$0
Total Headcount	0	0	0	0	0	0

The more detailed personnel plan shown here divides personnel expenditures into classifications including production, sales and marketing, general and administrative, and other.

The payroll assumptions in this model will also be used for the other financial projections. The Profit and Loss (also called income statement) will use personnel plan numbers.

Summary

As with your sales forecast, your personnel plan is actually just an educated guess. It is hard to make this kind of guess if you aren't used to forecasting, but you can do it by breaking the assumptions down into rows and thinking it through. If you're really having trouble with it, it may help to remember that a real business plan is frequently revised to accommodate changes in sales, marketing, and finances.

Part 3:

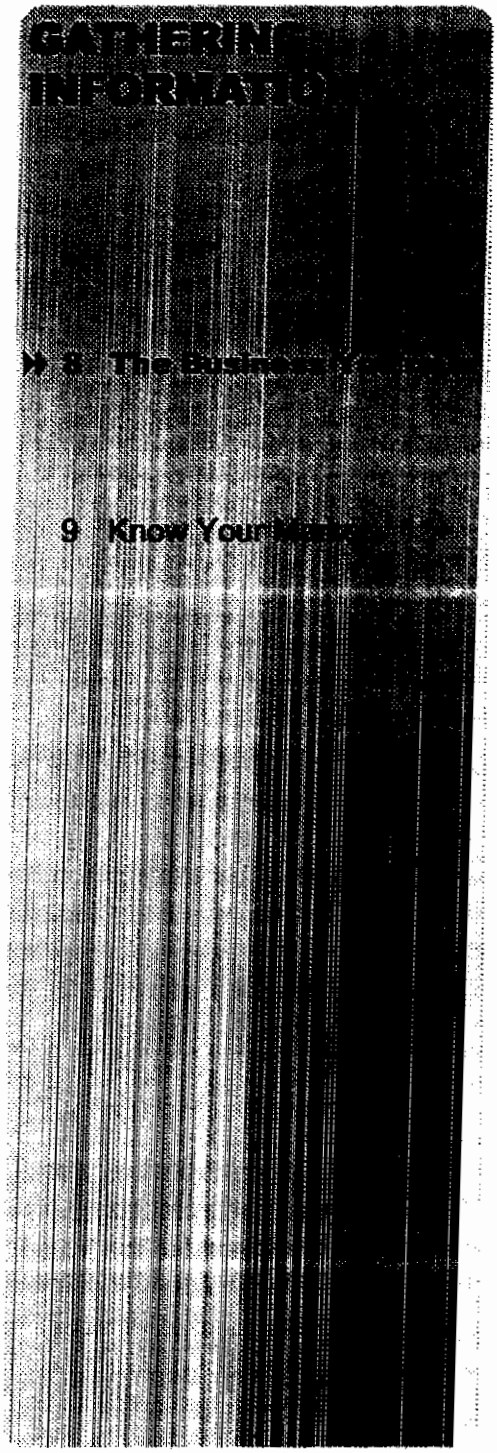
GATHERING INFORMATION

Ch 8: The Business You're In

Ch 9: Know Your Market

GATHERING INFORMATION

A good plan will include useful information about your market, your customers, and the business you're in.



Chapter 8:

THE BUSINESS YOU'RE IN

In addition to the information you've already developed, you also need to explain the type of business you're in; not just your company, but the business environment you'll be operating in. This is one step in a business plan's comprehensive market analysis.

You'll be expected to explain the general state of your industry and the nature of the business, especially if your plan is going outside your company to banks or investors.

Whether you're a service business, manufacturer, retailer, or some other type of business, you should do an Industry Analysis, describing:

- Industry Participants.
- Distribution Patterns.
- Competition.

This chapter will describe these topics in more detail.

Industry Analysis

A complete business plan discusses industry economics, participants, distribution patterns, factors in the competition, and whatever else describes the nature of this business to outsiders.

This chapter emphasizes the enormous impact of the Internet on the state of business information. Finding information isn't really the problem any more, after the information explosion and the huge growth in the Internet during the 1990s. Even 10 or 15 years ago, dealing with information was more a problem of sorting through it all than of finding raw data. That generality is more true every day.

There are websites for analysis, financial statistics, demographics, trade associations, and just about everything you'll need for a complete business plan. We'll look at that in this chapter after going through some of the topics to cover. I'll also include some of the old-fashioned reference works, just in case you really need them.

Industry Participants

You can't easily describe a type of business without describing the nature of the participants. There is a huge difference between an industry like long-distance telephone trunk services, in which there are only a few huge companies in any one country, and one like dry cleaning, in which there are tens of thousands of smaller participants.

This can make a big difference to a business and a business plan. The restaurant industry, for example, is what we call "pulverized" which, like the dry cleaning industry, is made up of many small participants. The fast food business, on the other hand, is composed of a few national brands participating in thousands of branded outlets, many of them franchised.

Economists talk of consolidation in an industry as a time when many small participants tend to disappear and a few large players emerge. In accounting, for example, there are a few large international firms whose names are well known and tens of thousands of smaller firms. The automobile business is composed of a few national brands participating in thousands of branded dealerships. In computer manufacturing, for example, there are a few large international firms whose names are well known, and thousands of smaller firms.

Distribution Patterns

Explain how distribution works in this industry. Is this an industry in which retailers are supported by regional distributors, as is the case for computer products, magazines, or auto parts? Does this industry depend on direct sales to large industrial customers? Do manufacturers support their own direct

sales forces, or do they work with product representatives?

Some products are almost always sold through retail stores to consumers, and sometimes these are distributed by distribution companies that buy from manufacturers. In other cases, the products are sold directly from manufacturers to stores. Some products are sold directly from the manufacturer to the final consumer through mail campaigns, national advertising, or other promotional means.

In many product categories there are several alternatives, and distribution choices are strategic. Encyclopedias and vacuum cleaners are traditionally sold door-to-door, but are also sold in stores and direct from manufacturer to consumer through radio and television ads.

Many products are distributed through direct business-to-business sales, and in long-term contracts such as the ones between car manufacturers and their suppliers of parts, materials, and components. In some industries companies use representatives, agents, or commissioned salespeople.

Technology can change the patterns of distribution in an industry or product category. The Internet, for example, is changing the options for software distribution, books, music, and other products. Cable communication is changing the options for distributing video products and video games.

The Distribution Patterns topic may not apply to most service companies, because distribution is normally about physical distribution of specific physical products. If you are a restaurant, graphic artist, professional services practice, architect, or some other service that doesn't involve distribution, just delete this topic.

For a few services, distribution may still be relevant. A phone service or cable provider, or an Internet provider, might describe distribution related to physical infrastructure. Some publishers may prefer to treat their business as a service rather than a manufacturing company, and in that case distribution may also be relevant.

Competition

Explain the nature of competition in this market. This topic is still in the general area of describing the industry, or type of business. Explain the general nature of competition in this business, and how the customers seem to choose one provider over another. What are the keys to success? What buying factors make the most difference—Price? Product features? Service? Support? Training? Software? Delivery dates? Are brand names important?

In the computer business, for example, competition might depend on reputation and trends in one part of the market, and on channels of distribution and advertising in another. In many

business-to-business industries, the nature of competition depends on direct selling, because channels are impractical. Price is vital in products competing with each other on retail shelves, but delivery and reliability might be more important for materials used by manufacturers in volume, for which a shortage can affect an entire production line.

In the restaurant business, for example, competition might depend on reputation and trends in one part of the market, and on location and parking in another.

In many professional service practices the nature of competition depends on word of mouth, because advertising is not completely accepted. Is there price competition between accountants, doctors, and lawyers? How do people choose travel agencies or florists for weddings? Why does someone hire one landscape architect over another? Why choose Starbucks, a national brand, over the local coffee house? All of this is the nature of competition.

Main Competitors

List the main competitors. What are the strengths and weaknesses of each? Consider their products, pricing, reputation, management, financial position, channels of distribution, brand awareness, business development, technology, or other factors that you feel are important. In what segments of the market do they operate? What seems to be their strategy? How much do they impact your products, and what threats and opportunities do they represent?

Finding Information

You'll end up getting almost everything you need on the Internet, using the World Wide Web. As it turns out, a great deal of business information and small business or entrepreneurial help is readily available. Always start first on the Internet. Market research firms and industry experts publish much of their information in websites, and in trade and business magazines. Reference sites index these magazines, many offer the texts online, and if not, then libraries stock them. Trade associations publish many listings and statistics in their websites as well as in hard-copy publications. Public stock laws require detailed reporting of financial results, and stock market information sources compile industry statistics from financial reports.

If you have a personal computer, you have most of what you need to access the information on the Internet. These services offer computerized versions of publication indices, statistical abstracts, and even complete text of published articles that are available online. In some cases, you can download information from a remote

database into your computer and dump it in a convenient format directly into your business plan.

If you aren't already online, I urge you to get a modem and communications software, get your Internet access, and learn how to use it. There is no substitute for the facility to dial up to the Internet through a modem and communicate with other people who have questions, advice, and similar interests. The Internet offers an amazing array of information and services. As you read through the more specific suggestions to follow, you can assume that most all of them have websites available.

You can probably find everything you need on the Internet, using the local library as an alternative. If not, you can turn to university libraries, professional information brokers, and United States government publications.

Business Plan Websites

Palo Alto Software maintains an Internet website that offers free downloadable sample plans, tips, outlines, and discussions of topics related to developing a business plan. Look for them at:

www.bplans.com

This site includes suggested links to other sources of small business information, including the Small Business Administration (SBA), Small Business Development Centers (SBDCs), and many other valuable sites. It is stocked with the latest available information, and references to information, that might be available elsewhere.

Illustration 8-1 shows Palo Alto Software's main website, as it looked when this book was written. The website address is:

www.paloalto.com

Both our main website and www.bplans.com are linked to our "Ask the Experts" and "Ask the Authors" sections. Our "Ask the Experts" team responds to general questions about business planning, entrepreneuring, and marketing planning. There are more than 1600 answers currently available in the database. You can post your question and receive an answer as an email reply.

Our "Ask the Authors" team answers specific questions about working with our products. Over 400 answers relating to these programs have been posted as of this writing.

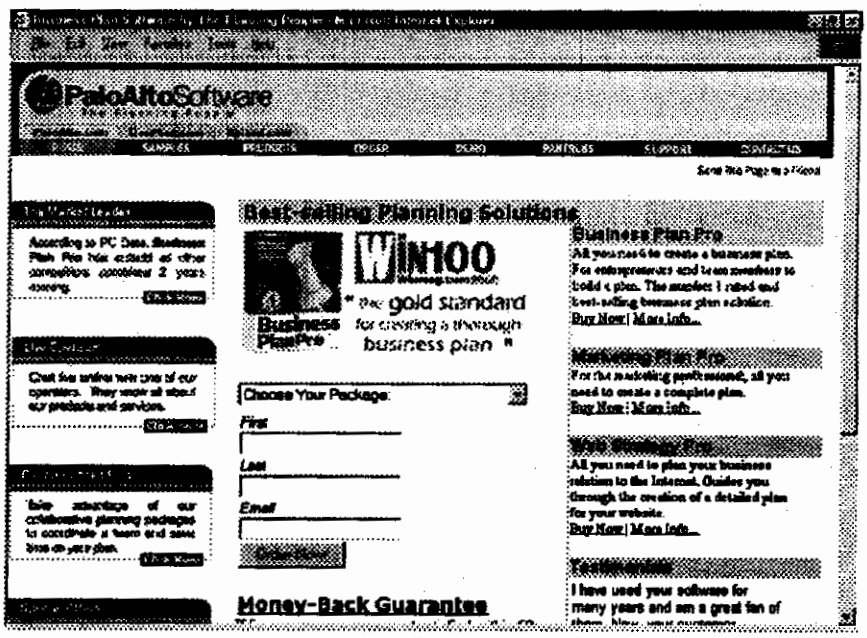
Government Sites

We describe the U.S. Census Bureau site in the sections on market analysis, Chapter 9: Know Your Market and Chapter 11: Market.

Visit the Small Business Administration (SBA) website at:

www.sba.gov

Illustration 8-1: Palo Alto Software's Main Website



The Palo Alto Software website is intended to provide valuable information to our customers, including market information, sample plans, and links to other sources of information.

Illustration 8-2 shows their home page.

Web Search Engines

Another excellent lead is Yahoo's small business information listing. From the main page at Yahoo, choose Business and Economy, then click on the link at small business information. The specific page address is:

www.yahoo.com/ business_and_economy/ small_business_information

Excite's competition is a small business information page at:

www.quicken.excite.com/ small_business/

Each one of these websites lead to further links and more information.

The RMA

The Risk Management Association (which was formerly known as The Robert Morris Associates), is a membership organization sponsored by banks which publishes an annual listing of standard financial ratios, developed by polling member banks, for actual business results of thousands of different companies in small business.

The RMA's publication, called *Annual Statement Studies*, is a very

Illustration 8-2: SBA Website

The Small Business Administration Internet site offers a wealth of free information and links to other sources as well.

valuable source of information. That study tells me, for example, that shoe retailers selling less than $1 million per year make an average of 42 percent gross margins, they spend an average of 40 percent on operating expenses, and they net about one percent of sales as profits. That number comes from The RMA's *Annual Statement Studies* from 1997. This publication sells, at this writing, as either hard copy or CD for less than $30 for members or $150 for nonmembers. You can find out more by calling (215) 446-4000, or visit their website at:

www.rmahq.com

As this is written, the RMA organization is looking at making its numbers more accessible, possibly allowing a direct search on their website. We are also looking at offering those numbers on the Palo Alto Software website, if possible, at:

www.paloalto.com

Trade Associations

Many industries are blessed with an active trade association that serves as a vital source of industry-specific information. Such associations regularly publish member directories and the

better ones publish statistical information that track industry sales, profits, economic trends, etc.

If you don't know which trade associations apply to your industry, find out. Search the Internet in Yahoo, Excite, and other search engines. Look for the website of the trade association for your industry. Ask at the reference section of your library for listings of industry associations. Ask someone else in the same industry. Consult an industry-specific magazine. Look in the readers guide or business index (in the following section, Business Publications) or *Ayer's Directory*, published by Gayle Publishers of Philadelphia, which lists periodicals. You can also look for association listings in *Information U.S.A.*, published by Viking Press.

As a specific example, since we mentioned a hypothetical shoe store, the National Shoe Retailers Association publishes a biennial Business Performance Report, a statistical review of more than 1,700 independent shoe retail companies. They sell it for $25 to members, or $50 to nonmembers. It covers men's, women's, children's, and family shoe companies, and includes financials and other information.

Business Publications

Business magazines are an important source of business information. Aside from the major general-interest business publications (*Business Week, Wall Street Journal*, etc.) there are many publications that look at specific industries.

Specialization is an important trend in the publishing business. Dingbats and Widgets may be boring to the general public, but they are exciting to Dingbat and Widget manufacturers who read about them regularly in their specialized magazines. The magazines are an important medium for industry-specific advertising, which is important to readers as well as advertisers.

The editorial staffs of these magazines have to fill the space between the ads. They do that by publishing as much industry-specific information as they can find, including statistics, forecasts, and industry profiles. Paging through one of these magazines can sometimes produce a great deal of business forecasting and economic information.

Several good reference sources list magazines, journals, and other publications. They also offer indices to published articles, which you can use to search for the exact references you need. These will be kept in the reference section of most libraries:

- *Readers Guide to Periodical Literature* indexes popular magazines. Published by H.W. Wilson of New York. Available in most library reference sections.

- *Business Periodicals Index*, also published by H.W. Wilson of New York. Indexes business magazines and journals only.
- *The Magazine Index*, published by Information Access Co.

Use the indices to identify published information that might help your business plan. When you find an index listing for an article that forecasts your industry or talks about industry economics or trends, jot down basic information on the publication and ask the library for a copy of the publication.

Reference Libraries

Reference librarians follow reference sources as a profession. They are excellent sources of good advice and tips on reference materials that may help you provide the information your business plan requires.

We have found Predicast *Sourcebooks* particularly useful on several occasions. These summarize forecasts that have appeared in any of several hundred business magazines and journals. The presentation focuses on the most important forecast information, and provides the magazine citation—date of publication, page number, etc.—as background.

Small Business Administration (SBA)

The United States Small Business Administration (SBA) is most known for its small business loans. However, it also provides business training, business information, and business services including workshops, counseling, publications, and videotapes. It has program offices in every state, the District of Columbia, the Virgin Islands, and Puerto Rico. It has business development specialists stationed in more than 100 field offices nationwide. We noted its website in Illustration 8-2.

The SBA publishes more than 50 business booklets and information products. These products are free, but the SBA suggests a small donation (under $3.00 for most of them). They answer many frequently asked questions and provide important information for business owners and would-be business owners.

If you don't have Internet access, you can find out about SBA business development programs and services by calling the SBA Small Business Answer Desk at 1-800-UASKSBA (1-800-827-5722). The answer desk "hotline" provides an information and referral service staffed by the organization's office of business initiatives, education, and training. In Washington D.C. the local number is (202) 205-7151. It operates during normal office hours five days a week.

Small Business Development Centers (SBDC)

Small business development centers (SBDCs) are funded in part by the Small Business Administration (SBA) and also work with local colleges and some other funding agencies. Every state has at least one SBDC, and most states have offices in several cities. We've found the SBDCs to be an excellent resource for businesses, offering high quality professional advice at very low prices. SBDCs also work closely with local colleges to provide courses in business planning, bookkeeping, employee management, sales, marketing, and other vital subjects. SBDCs also publish books, surveys, and studies, and in some cases even audio tapes, videotapes, and workshops. Palo Alto Software has worked with SBDCs to provide software and seminar courses related to business planning.

Service Corps of Retired Executives (SCORE)

The SBA sponsors the Service Corps of Retired Executives (SCORE), which includes more than 13,000 volunteers who provide training and one-on-one counseling at no charge, in 389 offices all over the country. You can find out about SCORE at:

www.score.org

U. S. Census Bureau

The United States Census Bureau, part of the Department of Commerce, has a wealth of information available for business and educational purposes. I refer to it, specifically and with examples, in the market analysis portion of Chapter 9: Know Your Market. Most of the Census Bureau's reports cover the entire United States and summarize data for the nation. However, the Bureau also publishes information on states, counties in states, and even cities within counties. Among the more valuable special reports are city and county reports that list the number of business establishments by type of establishment. These are special reports available directly from the Bureau and also from some libraries and electronic database services. Many of these reports are also available through online services. The Census has an electronic edition called CENDATA. It also has an Internet website at:

www.census.gov

Finding Business Assistance

New businesses, small businesses, and business planning are good for the economy. Governments, higher education institutions, and business organizations know that and try to help

businesses as much as possible. For you and your business, there is probably a great deal of help available.

SBDCs and SCORE

We've listed the SBA, SCORE, and SBDCs in the previous section as sources of information. Both SCORE and the SBDCs are also sources of real business assistance. They both exist to help people in small business and entrepreneurs. Not all services are free, but those that aren't free are priced way below market value. For business assistance, go there first. You can get local addresses for SBDCs on our website.

You can find local addresses for SCORE at their website.

In these pages, I only describe the United States organizations offering help to small business and start-ups. In other markets, similar organizations exist. Check with your chambers of commerce and industry organizations, government development organizations, and business schools.

Consultants, Accountants, and Attorneys

Consultants, accountants, and attorneys are the first line of business assistance. They aren't really the main focus of this chapter, however, and not because they aren't, in general, excellent sources of information. We have the utmost respect for the value of professional advice. In this discussion, however, we deal with relatively low-cost sources of business assistance, such as development agencies, local night schools, and online information services. We don't have a lot to add to the general doctrine of how to choose a good business professional. Let the buyer beware. A good business professional is always worth the money, if you have the money. Unfortunately, not all professionals are good, and it's hard to know who's good until you've committed money.

Always try to get some good references on professionals—other clients, satisfied clients — before you use them, and don't forget to check their references. Furthermore, it is not always true that with business consultants you get what you pay for. In our experience, there is not always a direct correlation between the fees charged and the value provided.

The SBA says consultants "can be a great asset to a small business owner. A business consultant's fees typically range between $25 and $250 an hour. If you decide to retain the services of a consultant, make sure he/she is reputable and be certain that you understand the fee schedule up front."

Business Organi ations

Explore what's available through local business organizations such as the Chamber of Commerce. Many have entrepreneurial interest groups, such as a new enterprise forum or industry associations.

Schools and Colleges

Many local community colleges work directly with the SBA to house the Small Business Development Centers (SBDCs) discussed as part of the government resources in the previous section. The community college/SBDC combination is often an excellent resource for workshops, classes, and even business consulting, all of it with experts whose job involves helping small businesses and start-ups, funded at least in part by the school and the government. Call your local community college and ask about business classes.

Libraries

Libraries regularly carry business periodicals and business books. Reference sections have staff able to help you find what you need. Look for magazine indices, trade association and government publications.

Banks

Banks are often involved in local development activities, and even when they don't directly offer business help (some do), they will at least know where else you can go for help. The SBA says "many bank officers have a broad understanding of finance, business operations, and the local economic climate. Do not be afraid to ask your banker questions."

State Development Agencies

Most states have development agencies of one kind or another. They also offer information related to small businesses and start-ups, and can be a valuable resource. Check with your other resource providers about state agencies. You can also look in your telephone directory for government agencies under the state category.

Trade Associations

Trade associations can be an excellent source of good information for some industry start-ups. Use your library directory of trade associations to explore associations related to your industry.

Publications

Many publications specialize in your industry, and others specialize in small businesses and start-ups. Explore libraries, bookstores, and magazine directories for publications for your specific industry.

Summary

We are in a brave new world of too much information, not too little. It will be hard for you to sort through all the information you'll find on your business or your industry, hard to summarize, hard to decide what is most important. As you do, keep in mind that the business plan is supposed to guide decisions. It is not a school report or even a graduate thesis. If it doesn't have a business purpose—which might be describing the industry for bank or investor, or for your own team, for example, but certainly not just to prove you can—then you shouldn't include it.

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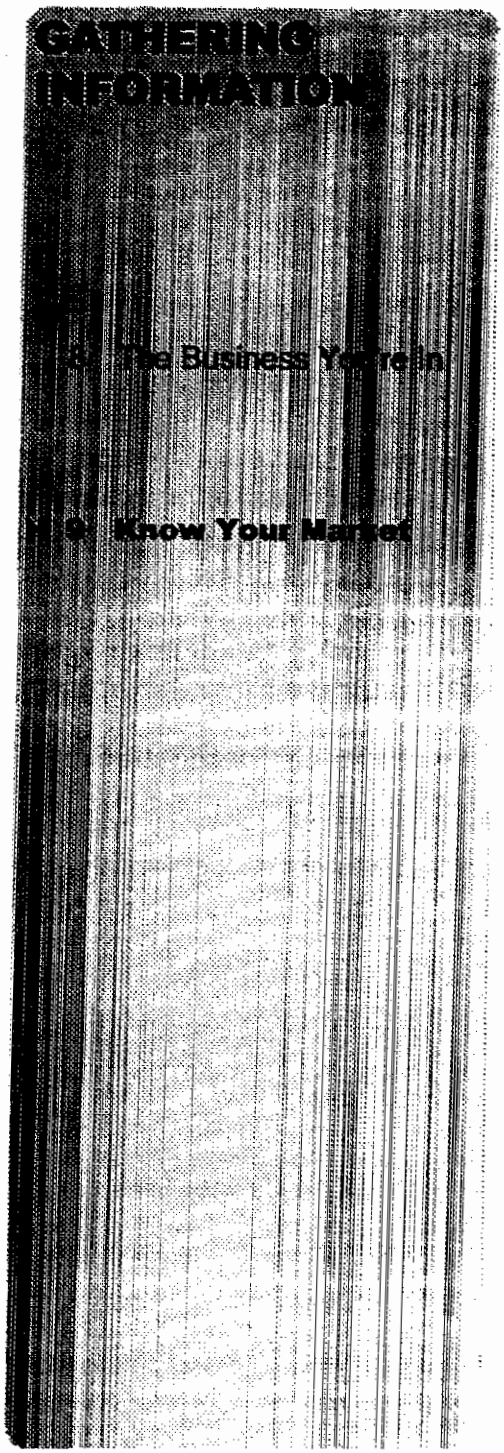


Chapter 9:

KNOW YOUR MARKET

What's the first thing, the most essential element, you need in business? No, not a plan: you need customers.

In Chapter 3: The Mini-Plan, you took a good first look at whether or not your business has (or will have) enough customers to keep it healthy. For the next step, you need to go further into a market analysis. It doesn't have to be academic, necessarily, and it doesn't have to be a huge project that stalls your planning process. What you want, ultimately, is to know your customers.

Practical Market Research

Some of the best market research is simple, practical, and even obvious. You don't get it from reference sections in libraries, or even from the Internet. Get it from real people, particularly customers or potential customers. Here are some practical examples.

Study Similar Businesses

Always take a look at other businesses similar to your own, as a very good first step. If you're looking at starting a new business, you may well be starting one similar to one you already

385

know. If you're doing a plan for an existing business, you are even more likely to know the business well. Even so, you can still learn a lot by looking at other similar businesses.

- **Look at existing, similar businesses.**

  If you are planning a retail shoe store, for example, spend some time looking at existing retail shoe store businesses. Park across the street and count the customers that go into the store. Note how long they stay inside, and how many come out with boxes that look like purchased shoes. You can probably even count how many pairs of shoes each customer buys. Browse the store and look at prices. Look at several stores, including the discount shoe stores and department store shoe departments.

- **Find a similar business in another place.**

  If you are planning a local business, find a similar business far enough away that you won't compete. For the shoe store example, you would identify shoe stores in similar towns in other states. Call the owner, explain your purpose truthfully, and ask about the business.

- **Scan local newspapers for people selling a similar business.**

  Contact the broker and ask for as much information as possible. If you are thinking of creating a shoe store and you find one for sale, you should consider yourself a prospective buyer. Maybe buying the existing store is the best thing. Even if you don't buy, the information you gain will be very valuable. Why is the owner selling? Is there something wrong with the business? You can probably get detailed financial information.

- **Shop the competition.**

  If you're in the restaurant business, patronize your competition once a month, rotating through different restaurants. If you own a shoe store, shop your competition once a month, and visit different stores.

Talk to Customers

If you're considering starting a new business, talk to potential customers. In the shoe store example, talk to people coming out of the stores. Talk to your neighbors, talk to your friends, talk to your relatives. Ask them how often they

buy shoes, what sizes, where, at what price, and whatever else you can think of. If you're starting a restaurant, landscape architecture business, butcher shop, bakery, or whatever, talk to customers.

At most business schools, when they teach business planning, students have to do a market survey as part of the plan. The plan isn't complete unless they go out and ask a credible number of people what they want, why, where they get it, how much they pay, and so forth. Although you may not go through the formality of a customer survey for your business, this information is vital.

At Palo Alto Software, we frequently put a customer survey on two of our websites on the Internet. People who are browsing the Internet looking for materials and information on business plans can visit us at:

www.paloalto.com

www.bplans.com

One of the sites does no selling, but provides free information, including free downloadable sample plans, outlines, and discussions, including answers to several hundred specific questions about details of developing a business plan. We sometimes ask people stopping by our websites to answer a few quick questions that concern us. The invitation promises just a few questions, and promises also that we won't ask their names or e-mail addresses, and we won't follow up with sales information. When we do, we get about 300 responses a month, which provides us with valuable information about the concerns people have as they consider writing a business plan.

If you have an ongoing business, the process of developing a plan should include talking to customers. Take a step away from the routine, dial up some of your customers, and ask them about your business. How are you doing? Why do they buy? How do they feel about your competitors? It is a good idea to take a customer to lunch once a month, just to keep yourself in touch.

Potential Customers

Most business plans contain an analysis of potential customers. We saw that in Chapter 3: The Mini-Plan, as part of the initial assessment. As an essential first step, you should have a good idea of how many potential customers there are. The way you find that out depends on your type of business. For example, a retail shoe store needs to know about individuals living in a local area, a graphic design firm needs to know about local businesses, and a national catalog needs to know about households and companies in an entire nation.

Good sources depend on what you need. Government and commercial statistics are usually more than enough, but for some plans you may end up purchasing information from professional publishers or contract researchers.

For general demographic data about a local area, if you have no easier source, ask the reference desk at a local library. A local university library is even better, particularly a business library. Chambers of Commerce usually have general information about a local market. In the United States, there is the federal government's U.S. Census Bureau. Nowadays the quickest route to the census bureau is the Internet website at:

www.census.gov

The official statistics are good for business information as well. You should be able to find a count of local businesses with some measure of size, such as sales or employees. The U.S. Census Bureau has a lot of information on businesses. You can also find free information at the Chamber of Commerce and probably at a local library.

Before the Internet became so prevalent, I frequently turned to vendors of mailing lists for general information about people and types of business. The mailing list vendors often have catalogs listing total numbers of types of people and types of business. For example, to find out how many attorneys or CPA offices there are in the United States, I might look at the lists for sale at a list broker.

Magazines provide another good source of demographics. If you're selling to computer stores, for example, call *Computer Retail Week* and *Computer Reseller News* and ask both publications for a media kit. The media kit is intended to sell pages of advertising to potential advertisers. They are frequently full of demographics on the readers. For information on any specific type of business, get the media kits for the magazines that cater to those types of businesses as readers.

Just browsing the Census Bureau website while preparing this draft, it took me about 10 minutes to discover that my home county has 378 general contractors, of which 360 have fewer than 20 employees and the remaining 18 have between 20 and 100. There are 238 legal businesses in my county, of which only 12 have more than 20 employees. Also, following the shoe store example, there are 32 shoe stores in the county, none of them having more than 20 employees. There are 111,000 households in the county, 61 percent of them owner occupied, and an average of 2.49 people per household. Some 22 percent of adults in the county are college graduates, and the median household income is $26,000. All of this information was available for free at the U.S. Census Bureau website, listed above.

Know the Customers

Aside from just counting the customers, you also want to know what they need, what they want, and what makes them buy. The more you know about them, the better. For individuals as customers, you probably want to know their average age, income levels, family size, media preferences, buying patterns, and as much else as you can find out that relates to your business. If you can, you want to divide them into groups according to useful classifications, such as income, age, buying habits, social behavior, values, or whatever other factors are important. For the shoe store example, shoe size is good, but you might also want activity preferences and even—if you can find it—psychographics.

Psychographics divides customers into cultural groups, value groups, social sets, motivator sets, or other interesting categories that might be useful for classifying customers. For example, in literature intended for potential retailers, First Colony Mall of Sugarland, Texas, describes its local area psychographics as including "25% Kid & Cul-de-Sacs (upscale suburban families, affluent), 5.4% Winner's Circle (suburban executives, wealthy), 19.2% Boomers and Babies (young white-collar suburban, upper middle income), and 7% Country Squires (elite ex-urban, wealthy)." Going into more detail, it calls the Kids & Cul-de-Sacs group "a noisy medley of bikes, dogs, carpools, rock music and sports." The Winner's Circle customers are "well-educated, mobile, executives and professionals with teenaged families. Big producers, prolific spenders, and global travelers." The Country Squires are "where the wealthy have escaped urban stress to live in rustic luxury. No. 4 in affluence, big bucks in the boondocks."

Stanford Research Institute (SRI) provides another example. Its VALS service (values and lifestyles) offers information on U.S. customers classified according to the value sets shown in Illustration 9-1. Customers and potential customers are divided into groups, including fulfilleds, achievers, experiencers, and others. More information about that is available from SRI from their website at:

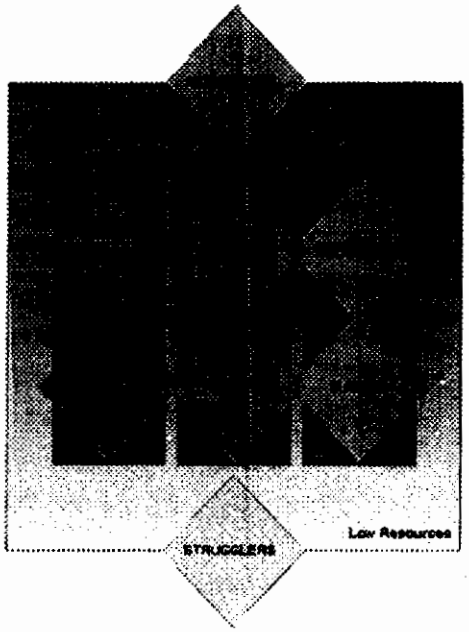
www.future.sri.com/vals/VALSindex.shtml

Their email is vals@sri.com, and the main telephone number is (650) 326-6200.

Internet Research for Business Plans

I'm old enough to remember when gathering information was a problem. Business consultants could make money just collecting the kind of information you need for a good business plan market analysis. These days, however, the problem is more sorting through all the

Illustration 9-1: SRI's Psychographics



The diagram illustrates SRI's VALS values and lifestyles psychographics research that divides the U.S. market into various types of potential customers.

information than it is gathering information. The World Wide Web on the Internet has completely changed practical business research.

This is far too large a topic to cover in this book, but it is also vital to modern business. By the time you're looking at developing a business plan, I think you should know how to use the World Wide Web on the Internet. At the very least, know how to find Yahoo and sort through its catalog of business information at:

www.yahoo.com

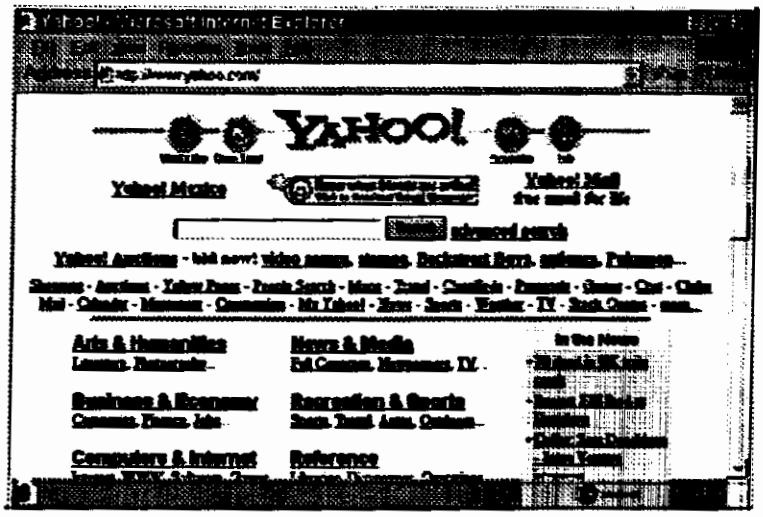
Another search engine for business information is Excite at:

www.excite.com

New search engines and new searching techniques appear all the time, so please try to stay current.

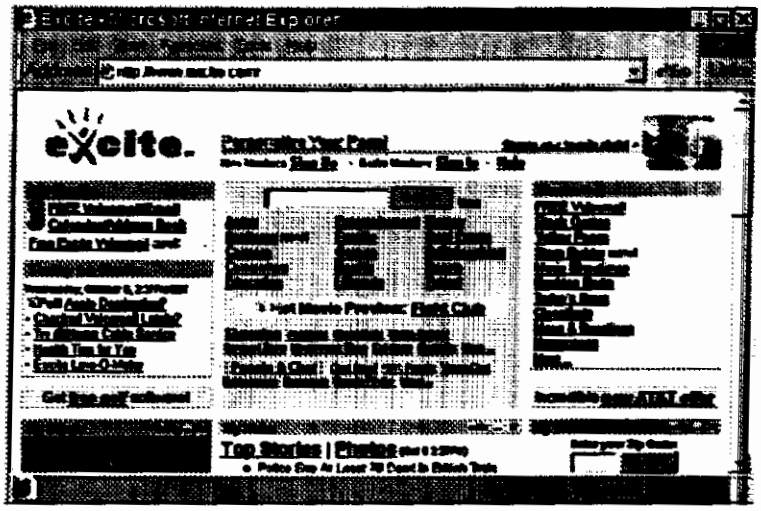
Just as an example, Illustration 9-2 shows Yahoo's main page. As you click on any of the underlined words, the view opens up to more information and more specifics. Illustration 9-3 shows the main search page at Excite.

Illustration 9-2: The Yahoo Internet Catalog



The Yahoo site (www.yahoo.com), probably the best-known Internet navigational aid, sorts and catalogs the World Wide Web according to logical categories.

Illustration 9-3: Searching the Net with Excite



The Excite Internet search engine at www.excite.com is another leading Internet search site that you can use to help you locate market and business information.

Summary

Projecting market growth is particularly important when your plan is related to finding investors or supporting a loan application, because market growth enhances the implied value of your business.

Cite growth rates in terms that fit the available information, whether growth in the number of potential customers, projected dollar sales, meals served, website projects, tax reporting hours, yards to landscape, or whatever you have.

Part 4:

FORECASTING

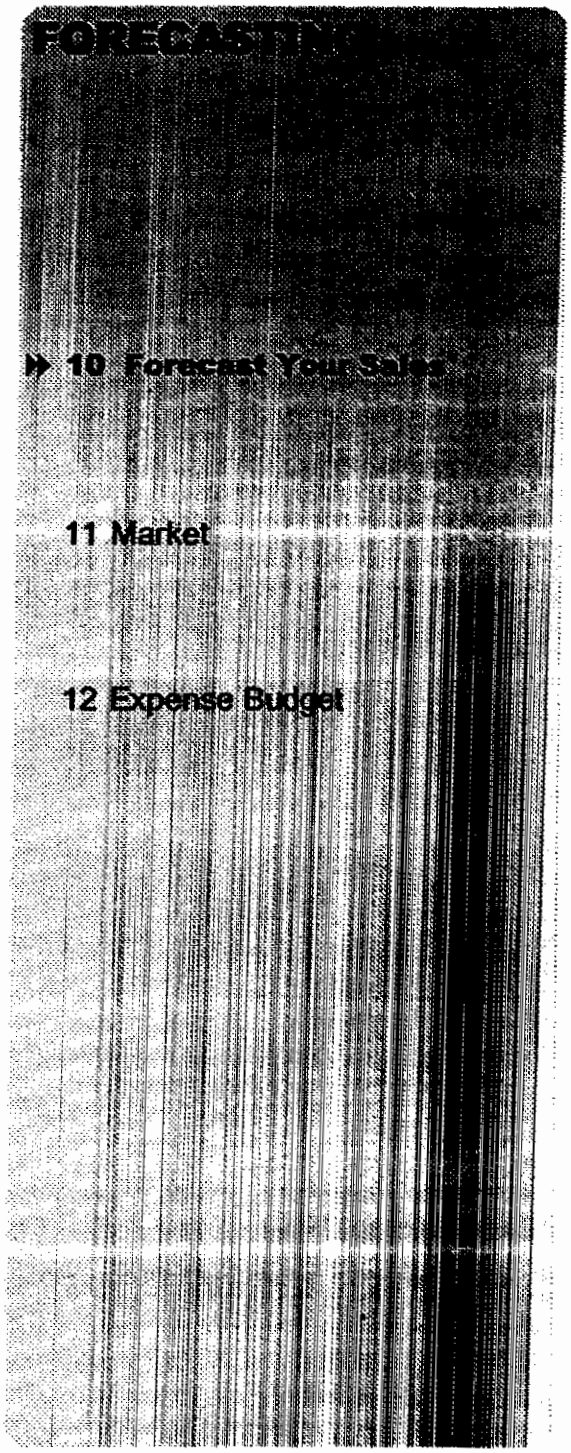
Ch 10: Forecast Your Sales

Ch 11: Market

Ch 12: Expense Budget

FORECASTING

Forecasting is more art than science, a combination of good research, logic, simple math, and educated guessing. It's hard to forecast but it's harder to run a business without forecasting.



Chapter 10:

FORECAST YOUR SALES

The next step is developing your sales forecast. Don't fear—it isn't as hard as most people think. Think of your sales forecast as an educated guess. Forecasting takes good working knowledge of your business, which is much more important than advanced degrees or complex mathematics. It is more art than science.

Whether you have business training or not, don't think you aren't qualified to forecast. If you can run a business, then you can forecast its sales. Most people can guess their own business' sales better than any expert device, statistical analysis, or mathematical routine. Experience counts more than any other factor.

If you've been following along with this book, you've been through some Internet sites and other information sources to know your customers and your industry. You were probably thinking about your sales forecast while you went through that information. The research for a good forecast is almost always harder than the final process of actually making the detailed educated guesses. You've probably already done the research.

395

Sales Forecast - Simple

When the research is already done, the mechanics of sales forecasting are relatively simple.

Break your sales down into manageable parts, and then forecast the parts. Guess your sales by line of sales, month by month, then add up the sales lines and add up the months.

Illustration 10-1 gives you an example of a simple sales forecast which estimates total dollar value for each category of sales.

Sales Forecast - Detailed

Forecasting is usually easier when you break your forecast down into components. As an example, consider a forecast that projects $1,000 in sales for the month, compared to one that projects 100 units at $10 each for the month. In the second case, when the forecast is price x units, as soon as you know the price is going up, you also know that the resulting sales should also increase. Thinking of the forecast in components is easier.

Illustration 10-1: Simple Sales Forecast

Sales	May	Jun	Jul	Aug
Retainer Consulting	$20,000	$20,000	$20,000	$20,000
Project Consulting	$30,000	$40,000	$20,000	$10,000
Market Research	$8,000	$15,000	$10,000	$5,000
Strategic Reports	$0	$0	$0	$0
Other	$0	$0	$0	$0
Total Sales	$58,000	$75,000	[illegible]	$35,000
Direct Costs	May	Jun	Jul	Aug
Retainer Consulting	$2,500	$2,500	$2,500	$2,500
Project Consulting	$5,000	$6,500	$3,500	$1,500
Market Research	$6,000	$10,000	$6,000	$4,000
Strategic Reports	$0	$0	$0	$0
Other	$0	$0	$0	$0
Subtotal Direct Cost of Sales	$13,500	$19,000	$12,000	$8,000

This example of a standard sales forecast includes simple price and cost forecasts to calculate projected sales and direct cost of sales. (Note: This graphic displays only four months of the twelve-month table).

Illustration 10-2 shows a units-based sales forecast. It takes assumptions for sales in units, then the assumed average prices, and multiplies them to calculate sales dollar values. Then it takes assumptions for unit costs and uses them, along with unit sales assumptions above, to calculate direct cost of sales.

Illustration 10-2: Detailed Sales Forecast

[illegible]	[illegible]	[illegible]	[illegible]	Apr
Systems	85	115	145	190
Service	200	200	200	200
Software	150	200	250	330
Training	145	155	165	170
Other	160	176	192	240
[illegible]				
[illegible]				
Systems	$2,000	$2,000	$2,000	1,829
Service	$75	$60	$50	46
Software	$200	$200	$200	200
Training	$37	$36	$38	41
Other	$300	$300	$300	300
[illegible]				
Systems	$170,000	$230,000	$290,000	347,510
Service	$15,000	$13,800	$11,800	9,200
Software	$30,000	$40,000	$50,000	66,000
Training	$5,365	$5,425	$6,435	6,970
Other	$48,000	$52,800	$57,600	72,000
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	Apr
Systems	$1,700	$1,700	$1,700	$1,700
Service	$30	$80	$80	$80
Software	$120	$120	$120	$120
Training	$11	$11	$11	$11
Other	$80	$80	$80	$80
[illegible]				
Systems	$144,500	$195,500	$246,500	$323,000
Service	$6,000	$12,000	$12,000	$12,000
Software	$18,000	$24,000	$30,000	$38,600
Training	$1,596	$1,705	$1,815	$1,870
Other	$14,400	$15,840	$17,280	$21,600
[illegible]				

The sales forecast multiplies unit forecasts by price and cost forecasts to calculate projected sales and cost of sales. (Note: This graphic displays four months only of the twelve-month table).

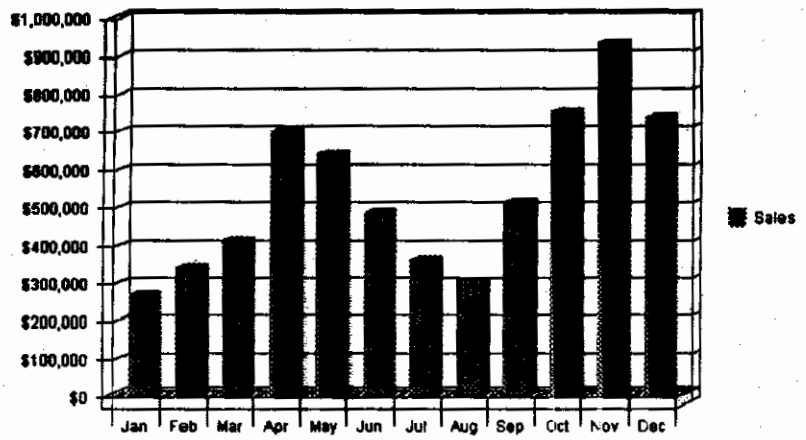
Graphics as Forecasting Tools

Business charts are much more than just pretty pictures; they are excellent tools for understanding and estimating numbers. You should always create charts to illustrate your sales forecast, then use them to evaluate the projected numbers. When you view your forecast on a business chart, does it look real? Does it make sense? It turns out that most humans sense the relative size of shapes better than they sense numbers, so we see a sales forecast differently when it shows up in a chart. Use the power of the computer to help you visualize your numbers.

For example, consider the monthly sales chart shown in Illustration 10-3. You can look at this chart and immediately see the ebbs and flows of sales during the year. Sales go up from January into April, then down from Spring into Summer, then up again in the Fall. When you look at a chart like that, you should ask yourself whether that pattern is correct. Is that the way your sales go?

The next chart, in Illustration 10-4, shows a comparison of three years of annual sales. Here again, you can sense the relative size of the numbers in the chart. If you knew the company involved, you'd be able to evaluate and discuss this sales forecast just by looking at the chart. Of course you'd probably want to

Illustration 10-3: Monthly Sales Forecast Chart



This chart shows planned sales for each month of the first 12 months.

know more detail about the assumptions behind the forecast, but you'd have a very good initial sense of the numbers already.

Explain Forecast and Related Background

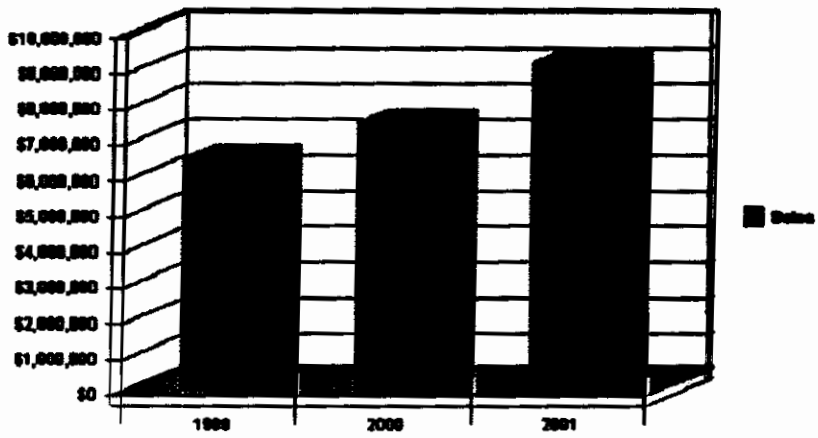
Although the charts and tables are great, you still need to explain them. A complete business plan should normally include some detailed text discussion of your sales forecast, sales strategy, sales programs, and related information. Ideally, you use the text, tables, and charts in your plan to provide some visual variety and ease of use. Put the tables and charts near the text covering the related topics.

In my recommended business plan text outline, the discussion of sales goes into Strategy and Implementation. You can change that to fit whichever logic and structure you use. In practical terms, you'll probably prepare these text topics as separate items, to be gathered into the plan as it is finished.

Sales Strategy

Somewhere near the sales forecast you should describe your sales strategy. Sales strategies deal with how and when to close sales prospects, how to compensate sales people, how to optimize order processing and database management, how to maneuver price, delivery, and conditions.

Illustration 10-4: Annual Sales Forecast Chart



This chart shows the sales forecast for each year of the three-year sales forecast.

399

How do you sell? Do you sell retail, wholesale, discount, mail order, phone order? Do you maintain a sales force? How are sales people trained, and compensated? Don't confuse sales strategy with marketing strategy. Sales close the deals that marketing opens.

To help differentiate between marketing strategy and sales strategy, think of marketing strategy as the broader effort of generating sales leads and sales strategy as the effort to bring those sales leads into the system as sales transactions. Marketing can affect image, awareness and propensity to buy, while sales involves getting the order.

Forecast Details

Your business plan text should summarize and highlight the numbers you have entered in the Sales Forecast table. Make sure you discuss important assumptions in enough detail, and that you explain the background sufficiently. Try to anticipate the questions your readers will ask. Include whatever information you think will be relevant.

Sales Programs

Use this topic to list the specific information related to sales programs in your Milestones table, with the specific persons responsible, deadlines, and budgets. How is this strategy to be implemented and measured? Do you have concrete and specific plans?

PAGE PB

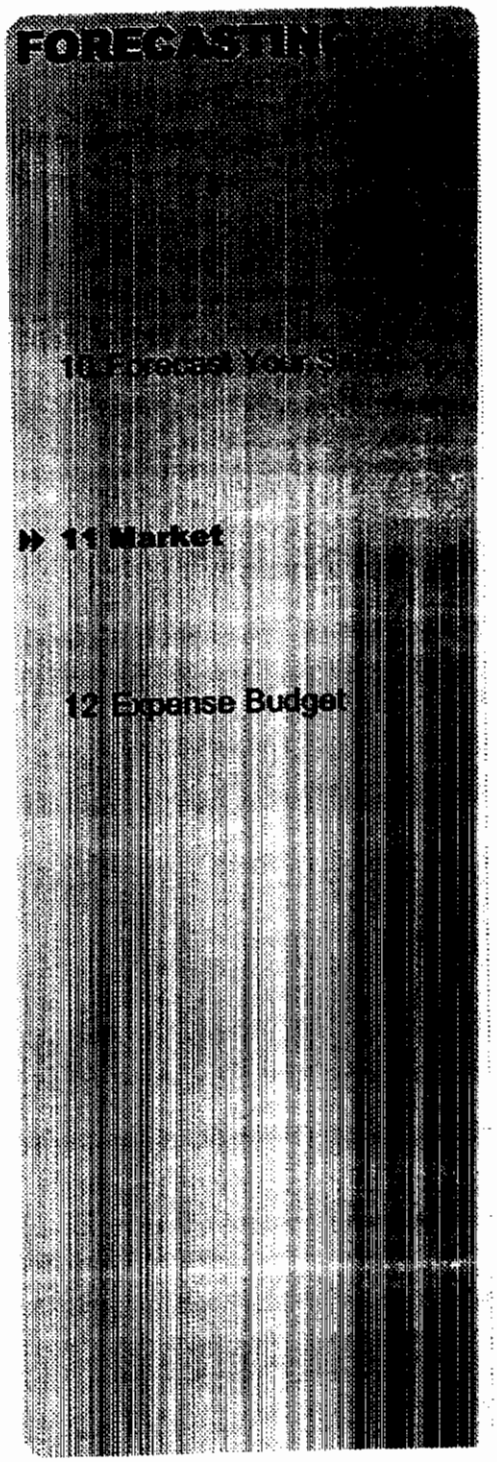
Business plans are about results, and generating results depends in part on how specific you are in the plan. For anything related to sales that is supposed to happen, include it here and list the person responsible, dates required, and budgets. All of that will make your business plan more real.

How Many Years?

I believe a business plan should normally project sales by month for the next 12 months, and annual sales for the following three years. This doesn't mean businesses shouldn't plan for a longer term than just three years, not by any means. It does mean, however, that the detail of monthly forecasts doesn't pay off beyond a year, except in special cases. It also means that the detail in the yearly forecasts probably doesn't make sense beyond three years. It does mean that you still plan your business for 5, 10, even 15-year timeframes; just don't do it within the detailed context of a business plan.

Summary

A sales forecast is hard for many people because they are unsure of how to forecast. Don't worry, if you know your business, you can give an educated guess of future sales. Remember, one thing harder than forecasting is running a business without a forecast.



Chapter 11:

MARKET

The market segmentation concept is crucial to market assessment and market strategy. Divide the market into workable market segments—age, income, product type, geography, buying patterns, customer needs, or other classifications. Define your terms, and define your market.

Market Segmentation Is Critical

Segmentation can make a huge difference in understanding your market. For example, when a local computer store business defines "high-end home office" and "high-technology small business" as its customer segments, its segmentation says a lot about its customers. The segmentation helps the company plan focus on the different types of potential customers.

When I was consulting for Apple Computer in the middle 1980s, we divided the markets into workable categories, including home, education, small business, large business, and all others. Some other groups in Apple also focused on government as a specific market segment. As you define the segment you point toward an understanding of the market. In the 1970s, I knew a company that was selling candy bars through retail channels. They segmented the market in a way that defined a range of products

401

as "oral satisfacters" (their term, not mine). That included candy, cookies, soft drinks, and bagged chips. The segmentation helped the marketers understand their real competition, which wasn't just other candy bars, but also other products targeting the same customer money. That understanding of competition improved the marketing and sales programs.

In today's business it's easy to see segmentation in action. Consider the different tone, content, and media for ads that sell products to kids, compared to those that sell the same product to parents. Car companies change their advertising substantially from one type of program to another. Stand-up comedian Richard Klein used to joke about the beer company ads that changed the style of the music to match the audience. He complained that he kept getting the country music version, but he liked the blues version better. The company that did those ads used the styles of music to address different target customer groups.

In developing segmentation, consider what factors make a difference in the purchasing, media, and value patterns of your target groups. Does age matter in choice of restaurants, or is style and food preference more important? Is income level a key factor? Education? I suspect some restaurants will sell more meals to college graduates than others. Is this because of education, age, or income levels?

In your initial assessment you may have already developed your first basic Market Analysis worksheet for analyzing potential customers. It will help you define your market and understand your key market segments. As you complete your market analysis, look at your segmentation critically and strategically. Is this the best segmentation? Be sure to revise and polish your numbers.

Market Analysis

As part of the business plan, you should generate enough information to develop a basic Market Analysis table. Illustration 11-1 gives you an example of a list of market segments, implemented as a spreadsheet table. Each segment is a group of customers that are classified according to the market segments you define.

You can create a simple market analysis by estimating the number of potential customers for each segment and the growth rate, as shown in this example. Once you have those numbers, it should be a simple step to develop the corresponding chart in Illustration 11-2.

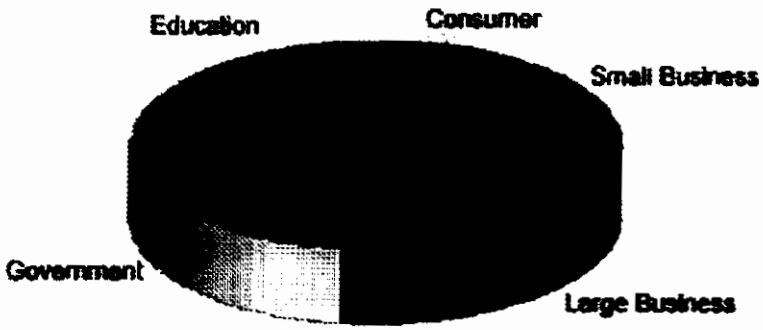
402

Illustration 11-1: Market Analysis Table

Potential Customers	Growth	Total Count
Consumer	2%	12,000
Small Business	5%	15,000
Large Business	8%	33,000
Government	-2%	36,000
Education	0%	19,000
Total	[illegible]	115,000

This table shows a simple classification of market segments, each segment defined by its total potential customer count and its estimated growth rate.

Illustration 11-2: Market Analysis Chart



This simple pie chart shows the potential market as the plan starts. The different segments of the pie show the relative sizes of different target market groups.

Filling Out the Text

After you find out about your market for a business plan, you also want to communicate that knowledge to the readers of your plan. Keep your explanations clear and concise. The depth of detail in market analysis will depend a lot on the type of plan. You may not need to provide a complete market study in a plan developed for internal use, when all of your team knows the market well. Maybe you'll just cite the type of customers you attract, and the part of town you serve. The market analysis section in a business plan is the section that is most likely to require research for information from outside your business, while most others require thinking and analysis of factors within your business.

This is a good point to add a word of caution about the level of detail required. Remember that planning is about making good decisions, applying focus and enforcing priorities. A business plan doesn't have to include a market analysis suitable for a Ph.D. candidate in market research. Planning is not about testing your knowledge. If you are looking for investment, then you may have to use this section to display your wisdom and understanding of your industry, but don't overdo it. If you are planning an internal plan and have no audience other than your own team, I recommend enough market research to make sure you're not missing key points.

The value of information is limited by its impact on decisions. If more market information is not going to help you do something better, then don't bother.

Begin With a Summary

Your market section should begin with a simple summary. You should generally describe the different groups of target customers included in your market analysis and refer briefly to why you are selecting these as targets. You may also want to summarize market growth, citing highlights of some growth projections, if you have this information available.

Assume that this paragraph might be included in a loan application or summary memo, so you need it to summarize the rest of the section. What information would be most important if you had only one brief topic to include about your market? A good technique is to skip this topic until you have finished the rest of the section. Then go back to the summary to write the highlights.

Explain your Segmentation

Make sure to explain and define the different segments in your table, particularly since you refer to them and they are the basis of your strategy. What distinguishes small business from large business, if this is part of your segmentation? Do you classify them by

sales, number of employees, or some other factor? I've seen segmentations that define customers by the channels they buy in, as in the retail customer compared to the wholesale or direct customer, also compared to the Internet download customer. Have you defined which segment is which, and why?

As you deal with segmentation, you should also introduce the strategy behind it and your choice of target markets. Explain why your business is focusing on these specific target market groups. What makes these groups more interesting than the other groups that you've ruled out? Why are the characteristics you specify important? This is more important for some businesses than others. A clothing boutique, for example, might focus on one set of upper-income customers instead of another, for strategic reasons. An office equipment store might focus on certain business types whose needs match the firm's expertise. Some fast food restaurants focus on families with children under driving age. Strategy is focus; it is creative and it doesn't follow pre-written formulas.

Explain Market Needs, Growth, and Trends

All marketing should be based on underlying needs. For each market segment included in your strategy, explain the market needs that lead to this group's wanting to buy your service. Did the need exist before the business was there? Are there other products or services or stores that offer different ways to satisfy this same need? Do you have market research related to this market need? It is always a good idea to try to define your retail offering in terms of target market needs, so you focus not on what you have to sell, but rather on what buyer needs you satisfy. As a shoe store, for example, are you selling shoes or are you satisfying the customer needs for covered feet? Are there really underlying needs, such as style and prestige for fashion footwear, or padding for runners, or jumping for basketball players, that relate to selling shoes? Are kids buying status with their basketball shoes?

Understand and explain market trends. What factors seem to be changing the market, or changing the business? What developing trends can make a difference? Market trends could be changes in demographics, changes in customer needs, a new sense of style or fashion, or something else. It depends on what business you are in.

For example, a building supply store might note the trend toward remodeling older homes instead of buying new homes, or a trend toward more rooms in larger houses, despite smaller families, because of home offices, dens, and exercise rooms.

A grocery store might note a trend toward Asian foods or spicier foods, or toward fresher, healthier foods, or development of a new shopping area in a different part of town.

A medical supplies store might note demographic trends; for example, as baby boomers age, this leads them more toward the need for estate planning and retirement planning.

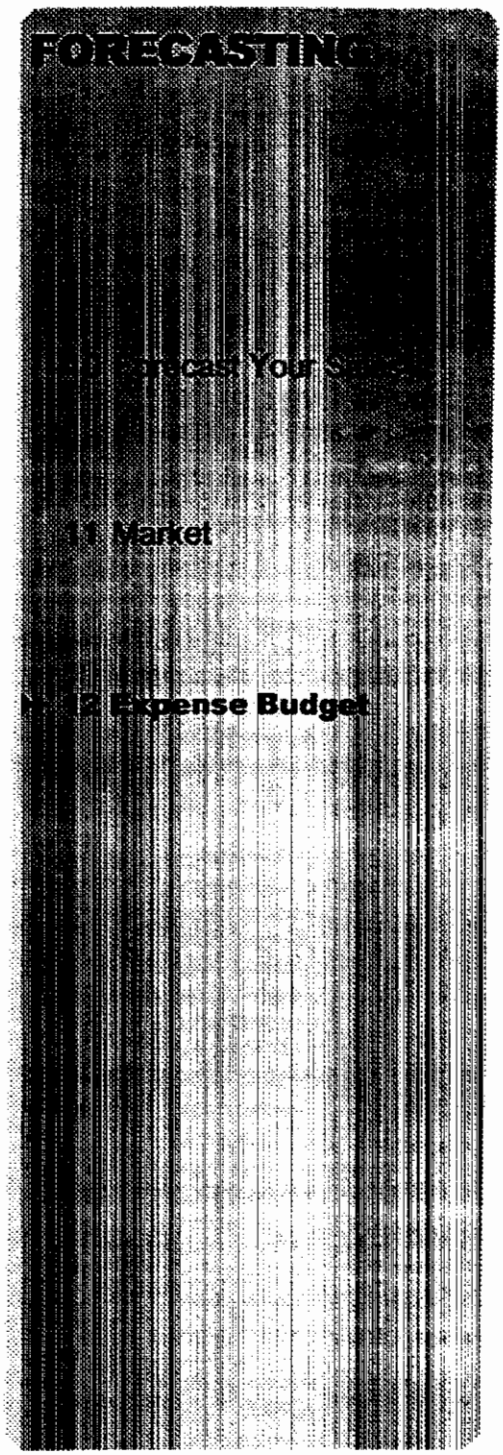
Look to market trends as a way to get ahead of the market, to know where it is going before it gets there. You should also understand and explain market growth in each segment. Ideally you cite experts, a market expert, market research firm, trade association, or credible journalist.

Summary

Projecting market growth is particularly important when your plan is related to finding investors or supporting a loan application, because market growth enhances the implied value of your business.

Cite growth rates in terms that fit the available information, whether growth in the number of potential customers, projected dollar sales, meals served, web site projects, tax reporting hours, yards to landscape, or whatever you have.

Whenever you can, relate the growth rates cited in expert forecasts to the growth in potential customers that you included in the market analysis table.



Chapter 12:

EXPENSE BUDGET

Budgets are plans. They are spending plans, activity plans, sales plans, marketing plans, all linked to the disciplines of careful projection and resource allocation.

Simple Math, Simple Numbers

The math of the expense budget is very simple. The content takes work, but not the design of the table. It's built on common sense and reasonable guesses, without statistical analysis, mathematical techniques, or any past data. The mathematics are also simple, sums of the rows and columns.

In the following example, rows are horizontal, columns are vertical. Each line of expense occupies a row, and months and years occupy columns. The source spreadsheet hides the monthly columns for March through October, for the purpose of illustration, so you can see the annual total. Those other months are there, even if they don't show. The total expense row sums the individual expense rows. The annual expense column sums the months for each row, including the total rows.

Illustration 12-1: Simple Expense Budget

Expense Budget Simple Sample	Jan	Feb	Nov	Dec	2000
Marketing Expense Budget	$15,000	$15,000	$20,000	$10,000	$150,000
Advertising	$2,000	$3,000	$2,000	$2,000	$25,000
Catalogs	$3,000	$11,800	$8,000	$5,000	$113,300
Websites	$0	$0	$15,000	$0	$16,000
Promotions	$0	$0	$0	$0	$20,200
Shows	$0	$7,000	$0	$0	$7,000
Literature	$0	$0	$0	$0	$1,000
Promotions	$1,000	$0	$0	$0	$31,000
Seminars	$2,000	$1,000	$500	$250	$10,250
Service	$5,000	$5,000	$5,000	$5,000	$60,000
Training	$1,000	$1,000	$1,000	$1,000	$12,000
Other					
Total Sales and Marketing Expenses	$[illegible]	$43,000	$51,500	$23,250	$445,750

An expense budget can be as simple or complex as you wish, but greater detail in your plan will give you more information about, and more control over, how you spend your money.

As you develop a budget, think of it as the part of your plan you can most easily control. Consider your plan objectives, your sales and marketing activities, and how you'll relate your spending to your strategy. Remember as you budget that you want to prioritize your spending to match your priorities in sales and target marketing. The emphasis in your strategy should show up in your actual detailed programs. That's your budget.

Budgeting is About People More Than Numbers

Managing the budget numbers can be simple, but managing a budget takes people, not spreadsheets. While budget numbers are simple, budget management isn't. To make a budget work, you need to add real management:

1. **Understand that it's about people:** Successful budgeting depends on people management more than anything else. Every budgeted item must be "owned" by somebody, meaning that the owner has responsibility for spending, authority to spend, and

the belief that the spending limit is realistic. People who don't believe in a budget won't try to implement it. People who don't believe that it matters won't worry about a budget either.

2. **Budget "ownership" is critical:** To "own" a budget item is to have the authority to spend and responsibility for spending. Ideally a budget management system makes plan-vs.-actual results visible to a group of managers, so that there is peer pressure that rewards budgeting successes and penalizes budgeting failures.

3. **Budgets need to be realistic:** Nobody really owns a budget item until they believe the budget amount is realistic. You can't really commit to a budget you don't believe in.

4. **It's also about following up:** Unless the people involved know that somebody will be tracking and following up, they won't honor a budget. Publishing budget plan and actual results will make a world of difference. Rewards for budget success and penalties for budget failures can be as simple as peer group managers sharing results.

The Budgeting Process

A budgeting process that brings people directly into the involvement and ownership of the budget is strongly recommended. Here's a simple step-by-step way to increase the importance of budgeting and implementation within your business.

1. **The budget preliminary meeting:** Start your budgeting process with a preliminary meeting that brings your main managers together. Discuss strategy and priorities, realistic amounts, and the planning process. Distribute a simple template and ask each manager to prepare a proposed budget for his or her area. Ask the managers to create a proposal that includes monthly numbers, and descriptions of the programs and activities involved.

2. **Budget development:** Allow a period for managers to develop their budgets, working with the standard template. Enforce deadlines for preliminary proposal and revisions. Consolidate the proposed budgets into a single budget table that lists all of the proposed programs and activities. In most cases the total of all proposals will be 2-3 times the real

amount your company can spend. Share that consolidated table with all managers. Share with them the difference between proposed budgets and actual spending limits, and ask them to think about it.

3. **Budget discussion:** Bring your managers back together with the budget table. Ideally you set up a conference room with a projector and the consolidated proposed budget table. Then you go through the budget, item by item, and pare it down to a realistic amount. Your managers will be together in a group, so they will have to defend different proposals, and as they do they will build up their personal commitments and their ownership of budget items and programs. They will explain why one program is more valuable than another, they will argue about relative value, and they will increase the level of peer-group commitment.

When this process works well, you have a more accurate, more realistic, and more useful budget. You also have a high level of commitment from your managers, who are now motivated to implement the budget as well as possible.

Your Budget and Milestones Work Together

As you develop your budget, keep in mind your business plan milestones. That's where you set specific goals, dates, responsibilities, and budgets for your managers. It makes a plan concrete. Make sure your budget matches your milestones.

Ideally, every line in a budget is assigned to somebody who is responsible for managing that budget. In most cases you'll have groups of budget areas assigned to specific people, and a budgeting process that emphasizes commitment and responsibility. You'll also need to make sure that everybody involved knows that results will be followed up.

The ideal plan relates the budgets to the Milestones table which we will discuss in more detail in Chapter 18: Make it Real. The Milestones table takes all the important activities included in a business plan and assigns them to specific managers, with specific dates and budgets. It also tracks completion of the milestones and actual results compared to planned results.

Illustration 12-2: Milestones Table

Corporate identity	TJ	12/17/98	Marketing	$10,000	1/15/99	$12,004	(29)	($2,004)
Seminar implementation	IR	1/10/99	Sales	$1,000	12/27/98	$1,000	14	$0
Business plan review	RJ	1/10/99	GM	$0	1/23/99	$500	(13)	($500)
Upgrade mailer	IR	1/16/99	Sales	$5,000	2/12/99	$1,000	(27)	$4,000
New corporate brochure	TJ	1/16/99	Marketing	$5,000	1/15/99	$5,000	1	$0
Delivery vans	SD	1/25/99	Service	$12,500	2/26/99	$0	(32)	$12,500
Direct mail	IR	2/16/99	Marketing	$3,500	2/25/99	$1,000	(9)	$2,500
Advertising	RJ	2/16/99	GM	$115,000	3/8/99	$100,000	(16)	$15,000
X4 Prototype	SG	2/25/99	Product	$2,500	2/25/99	$1,000	0	$1,500
Service revamp	SD	2/25/99	Product	$2,500	2/25/99	$2,500	0	$0
6 Presentations	IR	2/25/99	Sales	$0	1/10/99	$1,000	46	($1,000)
X4 Testing	SG	3/9/99	Product	$1,000	1/16/99	$0	48	$1,000
3 Accounts	SD	3/17/99	Sales	$0	3/17/99	$2,500	0	($2,500)
L30 prototype	PR	3/26/99	Product	$2,500	4/11/99	$15,000	(16)	($12,500)
Tech99 Expo	TB	4/12/99	Marketing	$15,000	1/25/99	$1,000	77	$14,000
VP S&M hired	JK	6/11/99	Sales	$1,000	7/25/99	$5,000	(44)	($4,000)
Mailing system	SD	7/25/99	Service	$5,000	7/14/99	$7,804	11	($2,804)
Other								

Using the Milestones table will assign responsibility and authority to the expense budget plans.

The Budget Will be Part of Profit and Loss

As you build your expense budget you are also creating your projected profit and loss. The profit and loss includes sales, costs of sales, and expenses.

With the way business numbers work, your expense budget will eventually become part of your Profit and Loss table which we'll see in Chapter 14: The Bottom Line. If you're using a personal computer with spreadsheet or business plan software, you should expect to see automatic linking so the expense budget is absorbed into the Profit and Loss table.

Illustration 12-3 shows a simple profit and loss, with the expense budget showing as the expenses portion of the larger statement.

This first example is a simple budget that doesn't divide expenses into categories. This is ideal for smaller businesses with only a few employees. By the time you have workgroups and a slightly larger business, however, you'll probably end up dividing expenses into categories such as sales and marketing expenses, administrative expenses, and other expenses. This next example shows how that might look when it's brought into the income statement.

411

Illustration12-3: Standard Profit and Loss Statement

	Oct	Nov	Dec	1999
Sales	$85,000	$90,000	$55,000	$592,000
Cost of Sales	$24,000	$25,000	$19,000	$159,000
Other	$0	$0	$0	$0
Total Cost of Sales	$24,000	$25,000	$19,000	$159,000
Gross margin	$61,000	$65,000	$36,000	$433,000
Gross margin percent	71.76%	72.22%	65.45%	73.14%
Operating expenses				
Advertising/promotion	$3,000	$3,000	$3,000	$36,000
PR	$2,500	$2,500	$2,500	$30,000
Travel	$7,500	$7,500	$7,500	$90,000
Misc.	$500	$500	$500	$6,000
Payroll expense	$27,250	$27,250	$27,250	$194,750
Leased equipment	$500	$500	$500	$6,000
Utilities	$1,000	$1,000	$1,000	$12,000
Insurance	$300	$300	$300	$3,600
Rent	$1,500	$1,500	$1,500	$18,000
Depreciation	$0	$0	$0	$200
Payroll burden	$4,760	$4,760	$4,760	$30,100
Contract/consultants	$0	$0	$0	$0
Other	$0	$0	$0	$0
Total Operating Expenses	$48,810	$48,810	$49,010	$426,650
Earnings Before Interest and Taxes	$12,190	$16,190	($13,010)	$6,350
Interest expense short-term	$400	$400	$400	$3,600
Interest expense long-term	$417	$417	$417	$5,000
Taxes incurred	$2,843	$3,843	($3,457)	($563)
Net Profit	$8,530	$11,530	($10,370)	($1,688)
Net Profit/Sales	10%	12.81%	-18.85%	-0.29%

This illustration shows the standard income statement (profit and loss). This is a partial graphic, showing only three months of a 12-month table.

Illustration 12-4: Detailed Profit and Loss Statement

Sales	$754,505	$934,341	$739,799	$5,982,247
Direct Cost of Sales	$565,402	$714,295	$567,100	$4,356,077
Production payroll	$14,500	$7,500	$7,500	$119,791
Other	$500	$500	$500	$5,751
Total Cost of Sales	$580,402	$722,295	$575,100	$4,481,819
Gross Margin %	23.08%	22.69%	22.28%	24.83%
Operating expenses:				
Sales and Marketing Expenses				
Payroll	$32,000	$16,000	$16,000	$303,858
Ads	$15,000	$20,000	$10,000	$138,570
Catalog	$2,000	$2,000	$2,000	$25,365
Mailing	$22,000	$8,000	$5,000	$113,569
Literature	$0	$0	$0	$8,401
Seminar	$0	$0	$0	$31,000
Service	$500	$500	$250	$10,296
Training	$450	$450	$450	$5,550
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sales and Marketing %	10.46%	6.63%	4.56%	11.27%
General and Administrative Expenses				
Payroll	$15,000	$7,500	$7,500	$135,000
Payroll Burden	$10,320	$4,760	$4,760	$93,840
Depreciation	$1,094	$1,105	$1,116	$12,681
Leased Equipment	$2,500	$2,500	$2,500	$30,000
Utilities	$750	$750	$750	$9,000
Insurance	$500	$500	$500	$6,000
Rent	$7,000	$7,000	$7,000	$84,000
Other	$545	$550	$556	$6,331
General and Administrative %	5.00%	2.64%	3.34%	6.32%
Other Expenses				
Other Payroll	$3,000	$3,000	$3,000	$36,000
Contract/Consultants	$125	$125	$125	$1,500
Other	—	—	—	—
Other %	0.41%	0.33%	0.42%	0.63%
Total Operating Expenses				
Profit Before Interest and Taxes	$54,319	$122,308	$103,192	$394,439
Interest Expense Short-term	$1,033	$2,533	$1,533	$15,133
Interest Expense Long-term	$2,511	$2,489	$2,488	$29,828
Taxes Incurred	$10,155	$23,457	$19,838	$89,935
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

This illustration shows the more detailed profit and loss analysis that divides operating expenses into categories. This is a partial graphic, showing three months of a 12-month table.

413

Summary

Regardless of which budget style you choose, you make very important choices as you plan your profit and loss. This is where you plan your expenses. You are estimating expenditures across the business, from rent and overhead to marketing expenses such as advertising, sales commissions, and public relations. Decisions you make here are as important as the mathematics are simple. Your sum of expenses ultimately determines your company's profitability. This is the business plan equivalent to budgeting, as you set your sights on the levels of expenditures you expect your company will need.

Part 5:

FINANCIAL ANALYSIS

Ch 13: About Business Numbers

Ch 14: The Bottom Line

Ch 15: Cash is King

Ch 16: Finish the Financials

415

FINANCIAL ANALYSIS

The financials aren't as hard as you think, particularly if you have the patience to follow the steps. A good plan includes sales, cash flow, profits, and related financials.

FINANCIAL ANALYSIS

» 13 About Business Numbers

14 The Bottom Line

15 Cash is King

16 Finish the Financials

Chapter 13:

ABOUT BUSINESS NUMBERS

A business plan depends on both words and numbers. You can't describe a business in words alone, and the numbers don't work without the words. In this chapter, we go through the basics of how the numbers come together.

Allow me to tell a personal story about words and numbers, and why you need both to make a complete plan.

In 1974, I switched from general journalism, writing for United Press International from Mexico City, to business journalism, writing for Business International and McGraw-Hill World News. With the switch, I found myself covering business and economics instead of general news, writing for (among others) *Business Week* and *Business Latin America*. At this point, because I thought it would be nice to have some idea what I was writing about, I went to the local graduate school at night for courses in general economics, accounting, finance, and marketing.

As I learned about macroeconomics, and how to read financial statements, I discovered that the truth in business is almost always a combination of words and numbers and can't be explained by either one without the other. For example, when a Central American government announced a new federal budget

417

that it said was going to both develop growth and reduce inflation, the numbers said that was a contradiction. You can't do both; you can do one or the other. You could only see that by dealing with both words and numbers.

A business plan is like that, too. You can't describe a plan without both text and tables, both words and numbers. The single most important analysis in a business plan is a cash flow plan, because cash is the most critical element in business. With the way the numbers work, however, you can't do a cash flow plan without looking at the income statement and balance sheets as well. You really can't do the income statement without looking at sales, cost of sales, personnel expenses and other expenses, so you need those too. And you'd have trouble doing a sales forecast without understanding your market, so a market analysis is recommended. And then you have the break-even as part of the initial assessment, and tables for business ratios, general assumptions, and other numbers. Step by step, the business plan becomes a collection of tables and charts around the text.

Numbers Tell the Story

Although cash is critical, people think in profits instead of cash. We all do. When you and your friends imagine a new business, you think of what it would cost to make the product, what you could sell it for, and what the profits per unit might be. We are trained to think of business as sales minus costs and expenses, which equals profits.

Unfortunately, we don't spend the profits in a business. We spend cash. Profitable companies go broke because they had all their money tied up in assets and couldn't pay their expenses. Working capital is critical to business health. Unfortunately, we don't see the cash implications as clearly as we should, which is one of the best reasons for proper business planning. We have to manage cash as well as profits.

Cash vs. Profits - Example

One of the best ways to understand the dilemma of cash vs. profits is to follow an otherwise-profitable company going broke because it can't meet its obligations. This is a quick and simple example. It also leads us into the relationship between income statement, balance sheet, and cash.

Start with $100, which we'll call capital. At the beginning of this exercise, your balance sheet has assets of $100—the money—and capital of $100. Assets are equal to capital plus liabilities. A summary of the simple financial statement at this point is shown in Illustration 13-1.

Illustration 13-1: Starting Numbers

	Income			Balance
Sales	$0	Assets		
Cost of Sales	$0		Bank Balance	$100
Profit	$0	Total		$100
		Liabilities		
		Capital		
			Paid-in	$100
			Earnings	
		Total		$100

The simple financials show a hypothetical widgets business as it starts.

If you buy a widget for $100 and sell it for $150, you should end up with $50 profit, which is what your income statement covers. Sales minus costs are profit. You should have $150 in the bank. Now your balance sheet shows the same $100 in original capital plus $50 in earnings, which are equal to the $150 you have in cash as an asset. Illustration 13-2 shows you how the financials work after the sale.

Illustration 13-2: Sell a Widget

	Income			Balance
Sales	$150	Assets		
Cost of Sales	$100		Bank Balance	$150
Profit	$50	Total		$150
		Liabilities		
		Capital		
			Paid-in	$100
			Earnings	$50
		Total		$150

This financial shows how the company looks after its first sale.

Buy another widget for $100 and sell it again for $150, and now you have $200 in the bank. Do it again, you have $250 in the bank. Your income statement shows sales of $450, cost of sales of $300, and profit of $150.

Illustration 13-3 shows your income statement and balance sheet at this point.

Illustration 13-3: Sell Three Widgets

	Income			Balance
Sales	$450	Assets		
Cost of Sales	$300		Bank Balance	$250
Profit	$150	Total		$250
		Liabilities		
		Capital		
			Paid-in	$100
			Earnings	$150
		Total		$250

At this point your business has sold 3 units and made $150 profit. In theory it has $250 in the bank.

Adding Some Realism

Now go back a step and make the situation more realistic. For example, most sales of products to businesses go on terms, with the money due in 30 days. So if you sold that widget on credit, you don't have $150 in the bank. You still have $50 in your bottom line, but now you have nothing in the bank. Instead, a customer owes you $150, which is what we call "Accounts Receivable."

Illustration 13-4: Selling on Terms

	Income			Balance
Sales	$150	Assets		
Cost of Sales	$100		Bank Balance	$0
Profit	$50		Accounts Receivable	$150
		Total		$150
		Liabilities		
		Capital		
			Paid-in	$100
			Earnings	$50
		Total		$150

Sales and profits are the same as in Illustration 13-2, but you sold on credit, so now you have no money in the bank.

Compare Illustration 13-4 to Illustration 13-2. This is what really happens to the huge number of businesses that sell to other businesses.

Knowing you can buy a widget for $100 and sell it for $150, you get your widget supplier to sell to you on the same terms you sell, net 30, instead of for cash. Now you have $100 that you owe to suppliers, which is called "Accounts Payable." You also have $100 worth of widget in inventory.

This gives you the case in Illustration 13-5, in which you are now poised to sell another widget and make more profit.

You have an extra $100 in assets (the widget in inventory) and an extra $100 as liabilities (Accounts Payable), so you are still in balance. Also, you still have no money.

Illustration 13-5: Buying on Terms

	Income			Balance
Sales	$150	Assets		
Cost of Sales	$100		Bank Balance	$0
Profit	$50		Accounts Receivable	$150
			Inventory	$100
		Total		$250
		Liabilities		
			Accounts Payable	$100
			Total liabilities	$100
		Capital		
			Paid-in	$100
			Earnings	$50
		Total		$250

Business looked good in Illustration 13-4, so you borrowed the money to buy another widget and continue.

Illustration 13-6 shows the financial picture after the same sales as in Illustration 13-3, but with sales to businesses on credit and purchase of inventory on credit as a short-term debt.

Illustration 13-6: Numbers Mount Up

	Income			Balance
Sales	$450	Assets		
Cost of Sales	$300		Bank Balance	$0
Profit	$150		Accounts Receivable	$450
			Inventory	$100
		Total		$550
		Liabilities		
			Accounts Payable	$100
			Short-term debt	$200
			Total liabilities	$300
		Capital		
			Paid-in	$100
			Earnings	$150
		Total		$550

You have the same sales and profits as in Illustration 13-3, but the balance sheet is more complex.

420

Now the case is more like what you have with real business numbers, in which you have to manage your cash very carefully, and the amounts sitting in inventory and accounts receivable are significant.

More Realism: Working Capital

Even in the case of Illustration 13-6, the example is completely unrealistic. Where are the running expenses, such as rent, salaries, telephones, or even advertising those widgets? How would they affect the cash situation? How far would we get if we couldn't pay the rent or the telephone bill while waiting for customers to pay us? Furthermore, what supplier would give us a widget on credit when we have no history and no assets? What bank would loan us money in this situation? Banks do loan against inventory and receivables, but only to a certain percentage of total value. What was missing here, all along, was working capital.

Important: In strict accounting terms, working capital is equal to short-term assets minus short-term liabilities. In real terms, however, working capital is the glue that holds your cash flow together. Get it into the bank before you need it, or you won't survive the unexpected.

Illustration 13-7 goes back to the beginning of this whole example and does it right, with enough capital in the beginning to finance the company.

Illustration 13-7: Working Capital

	Income			Balance
Sales	$400	Assets		
Cost of Sales	$300		Bank Balance	$300
Profit	$150		Accounts Receivable	$450
			Inventory	$100
		Total		$850
		Liabilities		
			Accounts Payable	$100
			Short-term debt	$200
			Total liabilities	$300
		Capital		
			Paid-in	$400
			Earnings	$150
		Total		$850

In this illustration the business has enough working capital to survive the unexpected.

Instead of starting with $100 as capital, this business looks a lot better with a starting capital of $400. With this additional capital from the start, buying on credit and borrowing against assets is more realistic. In Illustration 13-6 the working capital of $250 just wasn't enough, but in this scenario, working capital is up to $550. Now it has a proper input of working capital at the beginning. With even the barest of business plans, we could tell that $100 wasn't enough to get this business going.

421

I hope the theoretical examples make the concepts clear. If you followed these illustrations, you can see some enormous implications for running a business.

> *Important:* Every dollar in accounts receivable means a dollar less in cash. Every dollar of inventory is a dollar less in cash. Every dollar of accounts payable is a dollar more in cash.

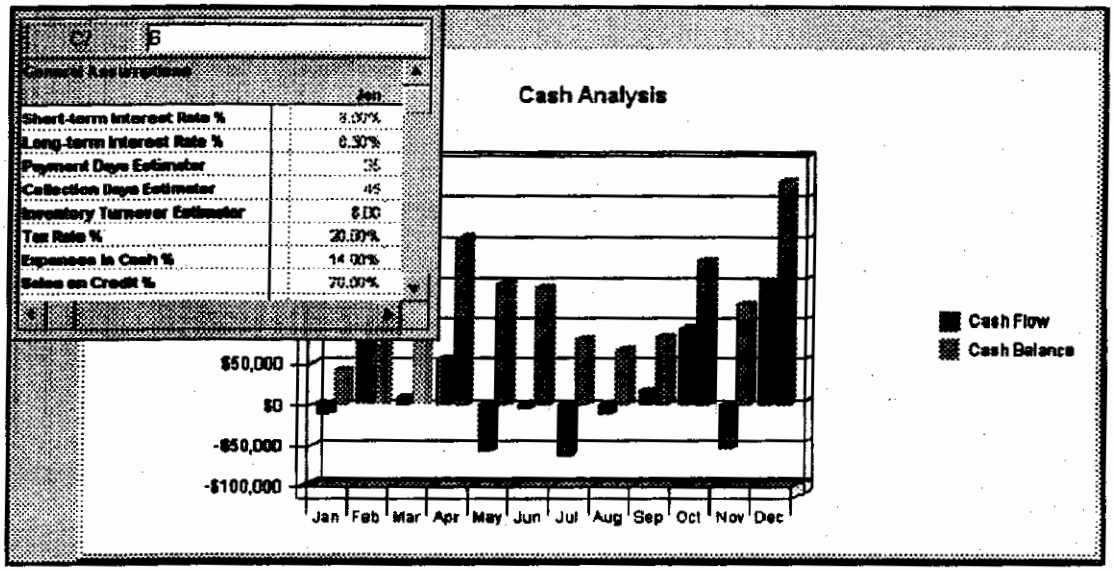
A Real Case Example

Now let's look at the implications in a real case. The real case is a computer store in a medium-sized local market.

The first graph, in Illustration 13-8, shows a representative sample business plan cash flow for 12 months, given standard assumptions for sales, costs, expenses, profits, and cash management. The sample company is profitable and growing. It sells about $6 million annually, produces about 8 percent net profit on sales, and is self-supporting.

The chart shows a 12-month projection of cash resources. The lighter of the two sets of bars represent the checkbook balance at the end of each month, and the other represents the cash flow, which is how much the balance changes in a month. The first set of bars should never drop below zero,

Illustration 13-8: As the Cash Case Starts



With the first take of the cash case, the business looks good and the cash plan is acceptable

422

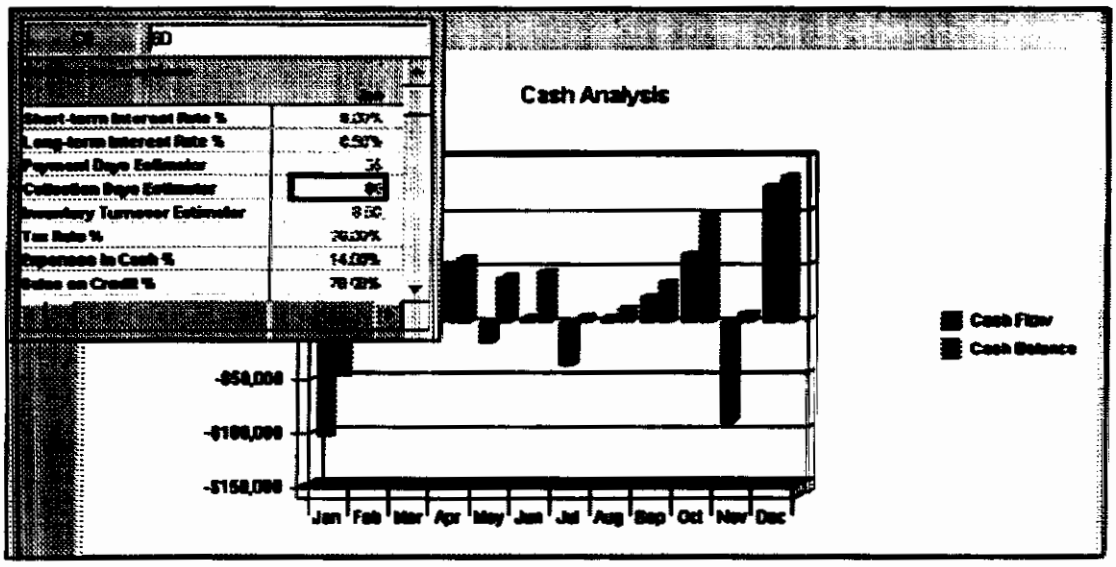
because if your checkbook balance is less than zero, then you are bouncing checks. The mathematics doesn't care, but the banks do. The cash flow bars, on the other hand, can drop below zero without major problems, as long as the balance stays above zero. For example, if a company's balance was $10,000 at the end of January, and its February cash flow is a negative $5,000, then the balance at the end of February is $5,000 and the cash flow is -$5,000. The lighter bar stays positive, but the darker one is negative.

In Illustration 13-9, only one assumption has changed: that same company now waits an extra 15 days, on average, to receive money from customers on invoices presented. The average wait, which is called "collection days," goes from 45 days to 60 days.

Nothing else changes - no new employees, no change in costs, no additional expenses.

No other changes except waiting on average an extra 15 days before receiving money owed from their customers. As stated earlier, accountants call money owed by customers "Accounts Receivable."

Illustration 13-9: Changing Collection Days Only



A single change, from 45 to 60 days, makes a huge difference in the cash flow.

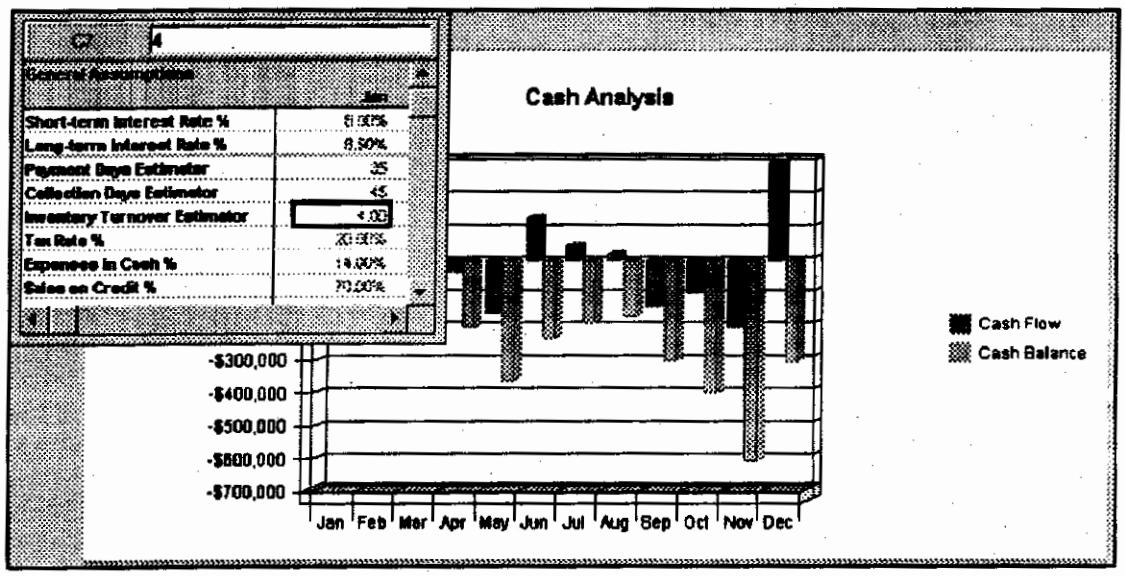
423

Notice here the critical importance of cash and the critical difference between cash and profits. With this single change in assumptions, the company is still as profitable as it was, down to the last dollar. Now, however, its projected bank balance in January is more than $50,000 below zero. Therefore, the company needs more than $50,000 in additional financing. This is new money needed, new investment or new borrowing. The problem can't be solved by reducing expenses or increasing sales.

Companies go out of business for problems like these. Even otherwise-healthy companies can go under for lack of cash. This kind of projection can kill a company if it sneaks up by surprise, but can be easily managed when there is a plan for it. This is an eloquent argument for good business planning.

In the third case, shown in Illustration 13-10, we set the collection days back to the original assumption of 45 days, but change the assumption for inventory. Where previously it kept an average of two month's worth of inventory on hand, in this changed assumption it now keeps three months of inventory on hand. Accountants call this Inventory Turnover. The changed assumption creates an inventory turnover rate of 4, instead of the previous rate of 6. The collection days are back to 45 in this next

Illustration 13-10: Changing Inventory Only



The change in inventory turnover shows the cash balance is now well below zero.

scene, but inventory turnover went from 6 to 4, which means keeping more inventory on hand.

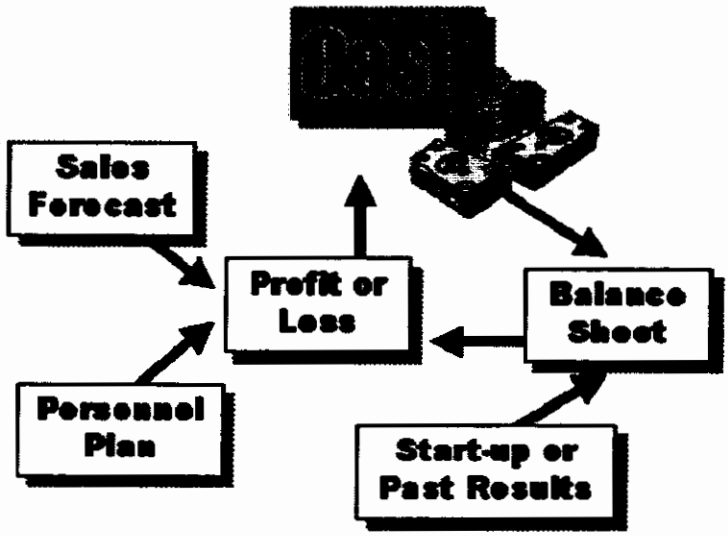
The implications of Illustration 13-10 are massive. This is still a profitable company, but it has a critical financial problem. You see how the cash balance bar falls to more than $600,000 below zero in November. That means that this company needs new money, new loans or new capital investment to make up its cash deficit, even though it is still profitable. This is hard to swallow until you see it happen in real business, but it is the truth and it will happen.

Profits are not cash.

A Graphical View

As you can see from the examples, the numbers in a normal business analysis, and in a business plan, are very interrelated. In previous chapters we did the sales forecast and personnel plan, which then reappeared in the income statement, also called the profit and loss. You can see from the examples how the income statement links to the balance sheet. We'll go into cash flow and balance in following chapters, but the point here is that the assumptions and estimates in the standard business plan tables link up to each other in a complex system of relationships. You can see how these relationships work in Illustration 13-11.

Illustration 13-11: Logic of Business Statements



The business plan tables and charts should be linked together to reflect the practical realities of business numbers.

425

Linking the Numbers

As the chart suggests and the previous examples show, there is a logical link between the business numbers in a standard analysis.

- Your sales forecast table should show sales and cost of sales. The same numbers in the sales forecast are the ones you use in the profit and loss table.
- As with sales, you should normally have a separate personnel plan, but the numbers showing in that table should be the same numbers that show up for personnel costs in your profit and loss table.
- Your profit and loss table should show the same numbers as the sales forecast and personnel plan tables in the proper areas. It should also show interest expenses as a logical reflection of interest rates and balances of debt.
- Your cash flow reflects your profit or loss, plus changes in balance sheet items and non-cash expenses such as depreciation, which are on the profit and loss table. The changes in the balance sheet are critical. For example, when you borrow money, it doesn't affect the profit or loss (except for interest expenses later on), but it makes a huge difference to your checking account balance.
- The balance sheet has to reflect the profit and loss and the cash flow tables.
- Your business ratios should calculate automatically, based on the numbers in the sales forecast, profit and loss, personnel plan, cash flow, and balance sheet tables.

Summary

Use the charts along with the tables to illustrate and enhance your analysis. For example, keeping the Cash Flow chart visible while changing assumptions gives you an instant picture of whether or not you have exceeded available cash resources as you plan your operations.

FINANCIAL ANALYSIS

13 About Business Numbers

14 The Bottom Line

15 Cash is King

16 Finish the Financials

Chapter 14:

THE BOTTOM LINE

The familiar phrase "the bottom line", often used as synonymous with the conclusion or the underlying truth, is actually taken from the standard Income statement in accounting, which subtracts costs and expenses from sales and shows profits as the bottom line of the statement.

Now that you have projected sales and cost of sales (discussed in Chapter 10: Forecast Your Sales) and personnel expenses (Chapter 7: Management Team), you're probably starting to think about comparing expenses to your sales.

Expenses start with personnel. Then you have rent, utilities, equipment, and probably some advertising, maybe commissions, public relations, and other expenses.

What we're leading to is profits. Profits are what is left over after you start with sales, then subtract cost of sales, expenses, and taxes.

The Income statement is the same as the Profit and Loss statement. They are also called "pro forma income" or "pro forma profit and loss." The pro forma income is the same as a standard income statement except that the standard statement shows real results from the past, while a pro forma statement is projecting the future.

Illustration 14-1 shows a simple income statement. The format and math starts with sales at the top. This example doesn't divide operating expenses into categories.

First, subtract cost of sales from sales. This gives you gross margin, an important ratio for comparisons and analysis. Acceptable gross margin levels depend on the industry. According to the 1997 Financial Statement Studies of Robert Morris Associates, an average shoe store has a gross margin of 42 percent. A hat manufacturer has a gross margin of 30 percent, and a grocery store about 20 percent.

The more detailed Profit and Loss is shown in Illustration 14-2.

Illustration 14-1: Standard Profit and Loss Statement

	Oct	Nov	Dec	1998
Sales	$85,000	$90,000	$55,000	$592,000
Cost of Sales	$24,000	$25,000	$19,000	$159,000
Other	$0	$0	$0	$0
Total Cost of Sales	$24,000	$25,000	$19,000	$159,000
Gross margin	$61,000	$65,000	$36,000	$433,000
Gross margin percent	71.76%	72.22%	65.45%	73.14%
Operating expenses				
Advertising/promotion	$3,000	$3,000	$3,000	$36,000
PR	$2,500	$2,500	$2,500	$30,000
Travel	$7,500	$7,500	$7,500	$90,000
Misc.	$500	$500	$500	$6,000
Payroll expense	$27,250	$27,250	$27,250	$194,750
Leased equipment	$500	$500	$500	$6,000
Utilities	$1,000	$1,000	$1,000	$12,000
Insurance	$300	$300	$300	$3,600
Rent	$1,500	$1,500	$1,500	$18,000
Depreciation	$0	$0	$0	$200
Payroll burden	$4,760	$4,760	$4,760	$30,100
Contract/consultants	$0	$0	$0	$0
Other	$0	$0	$0	$0
Total Operating Expenses	$48,810	$48,810	$49,010	$426,650
Earnings Before Interest and Taxes	$12,190	$16,190	($13,010)	$6,350
Interest expense short-term	$400	$400	$400	$3,600
Interest expense long-term	$417	$417	$417	$5,000
Taxes incurred	$2,843	$3,843	($3,457)	($563)
Net Profit	$8,530	$11,530	($10,370)	($1,688)
Net Profit/Sales	10%	12.81%	-18.85%	-0.29%

This illustration shows the standard income statement (profit and loss). This is a partial graphic, showing only three months of a 12-month table.

Illustration 14-2: Detailed Profit and Loss Statement

Sales	$754,505	$934,341	$739,799	$5,962,247
Direct Cost of Sales	$565,402	$714,295	$567,100	$4,356,077
Production payroll	$14,500	$7,500	$7,500	$119,791
Other	$500	$500	$500	$5,751
Total Cost of Sales	$580,402	$722,295	$575,100	$4,481,819
Gross Margin	$174,103	[illegible]	[illegible]	[illegible]
Gross Margin %	23.08%	22.69%	22.26%	24.83%
Operating expenses:				
Sales and Marketing Expenses				
Payroll	$32,000	$16,000	$16,000	$303,856
Ads	$15,000	$20,000	$10,000	$138,570
Catalog	$2,000	$2,000	$2,000	$25,395
Mailing	$22,000	$8,000	$5,000	$113,569
Literature	$0	$0	$0	$8,401
Seminar	$0	$0	$0	$31,000
Service	$500	$500	$250	$10,298
Training	$450	$450	$450	$5,650
[illegible]				
Sales and Marketing %	10.46%	6.83%	4.56%	11.27%
General and Administrative Expenses				
Payroll	$15,000	$7,500	$7,500	$135,000
Payroll Burden	$10,320	$4,760	$4,760	$93,840
Depreciation	$1,094	$1,105	$1,116	$12,881
Leased Equipment	$2,500	$2,500	$2,500	$30,000
Utilities	$750	$750	$750	$9,000
Insurance	$500	$500	$500	$6,000
Rent	$7,000	$7,000	$7,000	$84,000
Other	$545	$550	$556	$6,331
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
General and Administrative %	5.00%	2.84%	3.34%	6.32%
Other Expenses				
Other Payroll	$3,000	$3,000	$3,000	$36,000
Contract/Consultants	$125	$125	$125	$1,500
Other	—	—	—	—
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other %	0.41%	0.33%	0.42%	0.63%
Total Operating Expenses	[illegible]			
Profit Before Interest and Taxes	$54,319	$122,306	$103,192	$394,439
Interest Expense Short-term	$1,033	$2,533	$1,533	$15,133
Interest Expense Long-term	$2,511	$2,489	$2,466	$28,628
Taxes Incurred	$10,155	$23,457	$19,838	$88,936
[illegible]				

This illustration shows the more detailed profit and loss analysis that divides operating expenses into categories. This is a partial graphic, showing three months of a 12-month table.

429

This example divides operating expenses into standard categories, including Sales and Marketing expenses and General and Administrative expenses. It provides a clearer picture of the business expenses and what they stand for, but for some cases the extra detail may not be relevant.

Summary

Your profit and loss statement is where you budget and forecast your expenses. You also absorb the more important numbers of your sales forecast and personnel plan, to create a planned bottom line for profit. This is educated guessing. Keep it on a computer so you can revise often as the business changes.

FINANCIAL ANALYSIS

13 About Business Numbers

14 The Bottom Line

15 Cash is King

16 Finish the Financials

Chapter 15:

CASH IS KING

So, as we looked at business numbers in the previous two chapters, we focused on the critical difference between cash and profits. This chapter looks at how to plan for cash in a business plan, understanding the critical elements that affect cash flow. You don't want to be one of those businesses that goes broke even while producing profits.

Basic Cash Planning Example

Let's start again with a simple example. Compared to the examples in the previous chapter, Illustration 15-1 looks at the business from a completely different point of view; money coming in and money flowing out. Sales and profits are out of the picture, (although sales influences money in and costs and expenses influence money out).

In this very simple model, your sources of money are cash sales, payments from receivables, new loan money, and new investment. Your expenditures include buying widgets in cash, paying interest, paying bills as they come due (i.e. paying accounts payable), and paying off loans.

Illustration 15-1: Basic Cash Plan

Sources of Cash	Start	Jan	Feb	Mar
Cash sales	$0	$0	$0	$0
From receivables	$0	$0	$0	$0
New loans	$0	$0	$100	$100
New investment	$400	$0	$0	$0
Total Inflow	$400	$0	$100	$100
Expenditures				
Interest payments	$0	$0	$0	$0
Purchase widgets	$0	$100	$100	$100
Pay payables	$0	$0	$0	$100
Pay loans	$0	$0	$0	$0
Total cash out	$0	$100	$100	$200
Cash Flow	$400	($100)	$0	($100)
Cash Balance	$400	$300	$300	$200

This sample shows examples of incoming cash and expenditures for our sample company.

Illustration 15-2: Sample Case Income Statement

Income Statement	Jan	Feb	Mar	Apr	May	Jun
Cash sales	$81	$103	$125	$151	$193	$146
Sales on credit	$188	$240	$292	$352	$451	$340
Total Sales	$269	$343	$417	$503	$644	$486
Direct cost of sales	$185	$250	$309	$400	$503	$368
Personnel cost of sales	$10	$10	$10	$10	$10	$10
Other cost of sales	$1	$1	$1	$1	$1	$1
Total cost of sales	$196	$261	$320	$411	$514	$379
Gross margin	$73	$82	$97	$92	$130	$107
Operating expenses						
Wages and salaries	$44	$44	$44	$44	$44	$60
Depreciation	$1	$1	$1	$1	$1	$1
Other operating expenses	$25	$40	$28	$41	$47	$35
EBIT	$3	-$3	$24	$6	$38	$11
Interest	$3	$3	$4	$5	$5	$4
Taxes	$0	-$1	$4	$0	$7	$1
Net	$0	-$5	$16	$1	$26	$6

This table shows some of the more important assumptions related to the cash plan for a sample company (numbers displayed in thousands).

PAGE PB

Even at this basic level, you can see the potential complications and the need for linking the numbers up with a computer. Your estimated receipts from accounts receivable must have a logical relationship to sales and the balance of accounts receivable. Likewise, your payments of accounts payable have to relate to the balances of payables and the costs and expenses that created the payables. Vital as this is to business survival, it is not nearly as intuitive as the sales forecast, personnel plan, or income statement. The mathematics and the financials are more complex.

A More Realistic Example

The cash plan can get complicated quickly when you deal with a more realistic business example. In the following illustrations, we're going to look at the cash planning for the company whose cash balances were described in Chapter 13: About Business Numbers. This was the company whose cash flow varied widely, depending on cash assumptions.

Beginning Assumptions

With Illustrations 15-2 and 15-3 we set the starting points, which are the projected income and the starting balance. We see a simple example of business income, which we'll use as a first step for planning cash. Sales hit a peak in May. The example already divides

Illustration 15-3: Sample Case Starting Balance

Cash Balance	$55
Accounts receivable	$395
Inventory	$251
Other current assets	$25
Subtotal	$726
Capital assets	$350
Accumulated depreciation	$50
Subtotal	$300
Total Assets	$1,026
Liabilities	Start
Current liabilities	
Accounts payable	$224
Current notes	$90
Other current liabilities	$15
Subtotal	$329
Long-term liabilities	$285
Total Liabilities	$614
Capital	
Paid-in capital	$500
Retained earnings	-$163
Earnings	$75
Total Capital	$412
Capital and Liabilities	$1,026

This is the starting balance sheet for the cash flow example whose income statement is in Illustration 15-2.

sales between cash sales and sales on credit. We also have a simplified version of wages and operating expenses so that we can focus on the cash plan instead of the income statement.

Cash Flow Breakdown

In the following sections, I will explain the Cash Flow table, row by row, and how the numbers in your Cash Flow have a direct impact on the Balance Sheet, to help you better understand the direct link of one table to another, and how changes in one table directly affect the other.

For the purpose of discussion, we have divided a standard Cash Flow table into separate sections, Sources of Cash and Use of Cash.

Sources of Cash

Illustration 15-4 lists possible cash sources for our sample company. Most of these have balance sheet impact, and several come from the income statement. For now, we'll focus just on the cash flow. After dealing with cash, before we go on to the balance in Chapter 16: Finish the Financials, we'll also look briefly at the specific cash flow implications on the balance sheet.

1. The first row, **Cash sales**, is a simple estimate. It should link with your sales forecast and income statement to avoid inconsistencies. Cash sales plus sales on credit equal total sales. Normally, credit card sales are grouped into cash sales because the business gets the money in a day or two. Cash in this case

Illustration 15-4: Sample Case-Sources of Cash

Sources of Cash	Jan	Feb	Mar	Apr	May	Jun
Cash sales	$81	$103	$125	$151	$193	$146
From receivables	$212	$137	$190	$284	$292	$352
From sale of inventory	$0	$0	$0	$0	$0	$0
From sale of other current assets	$0	$0	$0	$0	$0	$0
From sale of capital assets	$0	$0	$0	$0	$0	$0
From new short-term debt	$0	$100	$30	$100	$0	$0
From new other current liabilities	$0	$0	$0	$0	$0	$0
From new long-term debt	$0	$0	$100	$0	$0	$0
New capital	$0	$25	$0	$0	$300	$0
Total inflow	$293	$365	$445	$535	$785	$498

In this section of the Cash Flow table, we describe the main sources of cash, such as cash sales and monies received from accounts receivable.

434

means cash, check, and credit card, everything except the real sales on credit, which are sales made on terms.

2. The second row, **From receivables**, is an estimate of the dollar amount received from customers as payments of accounts receivable.

3. The third row, **From sale of inventory**, shows special sales of inventory sold outside of the normal business. For example, sometimes a manufacturer sells excess inventory of materials or components, outside of its usual and regular sales channels. This shouldn't include the normal sales of normal inventory, which go on the income statement as sales.

4. The fourth and fifth rows are **From sale of other current assets** and **From sale of capital assets**. Selling short-term or long-term assets is another possible way to generate cash.

5. The next three rows are where you estimate amounts of money coming into the company as new borrowed money. The difference between each of the three is a matter of type of borrowing and terms. The row named **From new short-term debt** is for money you get by borrowing through normal lending institutions, as standard loans, with interest payments. The row named **From new other current liabilities** is for items like accrued taxes and accrued salaries and wages, money owed that will have to be paid, but isn't formally borrowed. Normally there are no interest expenses associated with this row. The row named **From new long-term debt** is for new money borrowed on longer terms.

6. The last row in Sources of Cash, **New capital**, is for new money coming into the company as investment.

Uses of Cash

Illustration 15-5 is an example of uses of cash for our sample company.

1. The first and most obvious use of cash is to **Pay accounts payable**. The accounts payable balance is money you owe. Every month, you pay off most of this.

2. The row named **Payroll etc.** is for wages and salaries and other compensation-related payments you make every month to your employees and the government. These obligations don't go into accounts payable. Instead, you pay them every month.

Illustration 15-5: Sample Case-Uses of Cash

Use of Cash	Jan	Feb	Mar	Apr	May	Jun
Pay accounts payable	$134	$146	$229	$205	$333	$352
Payroll etc.	$54	$54	$54	$54	$54	$69
Immediate expenses	$6	$5	$5	$4	$5	$4
Immediate cost of sales	$5	$5	$4	$5	$4	$5
Interest payments	$3	$3	$4	$5	$5	$4
Principal payments short-term debt	$0	$0	$0	$0	$0	$100
Principal payments long-term debt	$3	$3	$3	$3	$3	$3
Inventory in cash	$102	$143	$144	$251	$253	$0
New capital assets	$25	$0	$15	$0	$50	$0
Total cash out	$332	$359	$458	$527	$707	$537

This section of the Cash Flow table lists projected expenditures, such as payments on accounts payable and direct payments of wages and salaries.

3. The row named **Immediate expenses** is for other expenses, aside from the wages and such in the row right above it, that you pay as incurred. They never go into payables to wait their turn.

4. The **Immediate cost of sales** row is very similar to the one above it, the difference being that these are costs of sales, instead of expenses, that are paid as incurred.

5. The next row, **Interest payments**, assumes that interest is paid as incurred instead of waiting in payables to be paid later. Therefore, interest payments decrease cash. The amounts have to match the income statement.

6. The next two rows, **Principal payments short-term debt** and **Principal payments long-term debt**, are for principal payments of debt. When you pay off your loans, you lose cash. In the example, there is a regular payoff of long-term debt, and a single payoff of part of the short-term debt.

7. In the second row from the bottom, you record new **Inventory in cash**. You'll have to know how much new inventory you'll be buying, so the portion of it paid in the same month is part of calculating new payables.

436

8. Finally, in the last row, purchases of New capital assets reduce cash and change the balance sheet amount for the related assets.

Calculating The Cash Balance

When you're done with both sections, add the new sources of cash and subtract the uses of cash, and you have an estimated ending Cash Balance for each month, as shown in Illustration 15-6.

Even with this detailed list, we've still missed some other items that might reduce cash. There is nothing in this sample table for purchase of short-term assets. There is nothing showing for owner's draw or dividends. There is no row for interest income, or miscellaneous income. This is just a simple example intended to point out the relationships between the different tables, and the dependencies involved in calculating a real cash flow.

Illustration 15-6: Sample Case-Cash Balance

Cash sales	$81	$103	$125	$151	$193	$146
From receivables	$212	$137	$190	$284	$292	$352
From sale of inventory	$0	$0	$0	$0	$0	$0
From sale of other current assets	$0	$0	$0	$0	$0	$0
From sale of capital assets	$0	$0	$0	$0	$0	$0
From new short-term debt	$0	$100	$30	$100	$0	$0
From new other current liabilities	$0	$0	$0	$0	$0	$0
From new long-term debt	$0	$0	$100	$0	$0	$0
New capital	$0	$25	$0	$0	$300	$0
Total Income	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Use of Cash	Jan	Feb				
Pay accounts payable	$134	$146	$230	$205	$333	$352
Payroll etc.	$54	$54	$54	$54	$54	$70
Immediate expenses	$6	$5	$5	$4	$5	$4
Immediate cost of sales	$5	$5	$4	$5	$4	$5
Interest payments	$3	$3	$4	$5	$5	$4
Principal payments short-term debt						$100
Principle payments long-term debt	$3	$3	$3	$3	$3	$3
Inventory in cash	$103	$143	$144	$251	$253	$0
New capital assets	$25		$15		$50	
Total Cash Use	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Cash Flow	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Cash Balance	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

The full cash plan lets you compare your Sources of Cash with Use of Cash and see the Cash Balance.

Links with Balance Sheet

Even though I cover the balance sheet in the next chapter, I can't talk about cash without relating the cash flow to the balance sheet. The three most important financial statements in a plan, income statement, cash flow, and balance sheet, are linked to each other.

Illustration 15-7 shows the sample balance sheet linked to the cash flow in the previous illustration. Most of the rows on this balance are directly affected by the cash flow, and need to change every time the cash changes. To close the circle in this chapter, let's look in detail at the balance:

1. The **Cash Balance** row is the balance in your checkbook. You calculate this with the cash flow.

2. **Accounts receivable** is the money owed to you by

Illustration 15-7: Related Balance Sheet

Assets	Start	Jan	Feb	Mar	Apr	May	Jun
Current Assets							
Cash Balance	$55	$15	$21	$7	$15	$93	$53
Accounts receivable	$395	$371	$474	$576	$644	$803	$791
Inventory	$251	$332	$444	$545	$701	$878	$647
Other current assets	$25	$25	$25	$25	$25	$25	$25
Subtotal	$726	$743	$964	$1,153	$1,385	$1,799	$1,516
Capital assets	$350	$375	$375	$390	$390	$440	$440
Accumulated depreciation	$50	$51	$52	$53	$54	$55	$56
Subtotal	$300	$324	$323	$337	$336	$385	$384
Total Assets	$1,026	$1,067	$1,287	$1,490	$1,721	$2,184	$1,900
Liabilities	Start	Jan	Feb	Mar	Apr	May	Jun
Current liabilities							
Accounts payable	$224	$268	$371	$431	$564	$704	$517
Current notes	$90	$90	$190	$220	$320	$320	$220
Other current liabilities	$15	$15	$15	$15	$15	$15	$15
Subtotal	$329	$373	$576	$666	$899	$1,039	$752
Long-term liabilities	$285	$282	$279	$376	$373	$370	$367
Total Liabilities	$614	$655	$855	$1,042	$1,272	$1,409	$1,119
Capital	Start	Jan	Feb	Mar	Apr	May	Jun
Paid-in capital	$500	$500	$525	$525	$525	$825	$825
Retained earnings	-$163	-$88	-$88	-$88	-$88	-$88	-$88
Earnings	$75	$0	-$5	$11	$12	$38	$44
Total Capital	$412	$412	$432	$448	$449	$775	$781
Capital and Liabilities	$1,026	$1,067	$1,287	$1,490	$1,721	$2,184	$1,900

The balance sheet should follow from the income statement and the cash flow. Notice how long-term liabilities respond in March to a new loan and a principal payment of an existing loan.
PAGE PB

Y38

customers for sales already made. The balance increases with sales on credit, and decreases with payments of accounts receivable. For any month, the ending balance is the sum of the previous ending balance, plus new sales on credit, minus payments received.

3. Calculate the **Inventory** balance as the previous balance minus direct cost of sales plus new inventory purchases.

4. Calculate **Other current assets** as the previous balance plus new assets purchased (from the uses of cash) minus disposal of assets (from sources of cash).

5. **Capital assets** are long-term assets, usually plant and equipment. This month's balance is equal to last month's balance plus new assets purchased, minus disposal of assets.

6. **Accumulated depreciation** decreases the value of the capital assets. This month's balance is last month's balance plus new depreciation, from the income statement.

7. **Accounts payable** will be last month's balance plus additions (a subset of costs and expenses) minus payments of payables. New payables will include new inventory not paid for when purchased, plus indirect costs of sales not paid as incurred, operating expenses not paid as incurred, and similar items.

8. **Current notes** (short-term) will be equal to last month's balance plus new borrowing minus principal payments. Interest payments are not included, because they go into the income statement and don't affect the balance. Principal payments and new borrowing should come from the cash flow.

9. **Other current liabilities** are things like accrued taxes and accrued salary, liabilities you know you have but haven't paid.

10. **Long-term liabilities** (debt) increases when you borrow and decreases with payment of principal. The balance is going to be last month's balance plus new borrowing as a source of cash, minus principal payments as a use of cash. In the sample case, the March balance shows a $100 increase for a new loan, minus a $3 decrease for payment of principal, so that the $376 at the end of March is exactly $97 more than the $279 at the end of February.

11. **Paid-in capital** is money invested. The balance should be last month's balance plus new investment from sources of cash, minus dividends from uses of cash.

12. **Retained earnings** is the accumulated earnings reinvested in the company, not taken out as dividends. Normally this changes once a year when the annual statements are prepared.

13. **Earnings** are the accumulated earnings since the end of the last year. This month's balance should be equal to last month's balance plus this month's earnings. At the end of the year, with an annual adjustment, earnings still left in the business become retained earnings.

Understanding Cash Flow

Your cash plan is the most critical financial element of your business projections. If it is going to be useful at all, a business plan helps you develop a realistic cash estimate, based on the underlying relationships we explored in the previous chapter. Whenever you change an assumption in sales forecast, personnel plan, profit and loss, or balance sheet, it affects your cash flow.

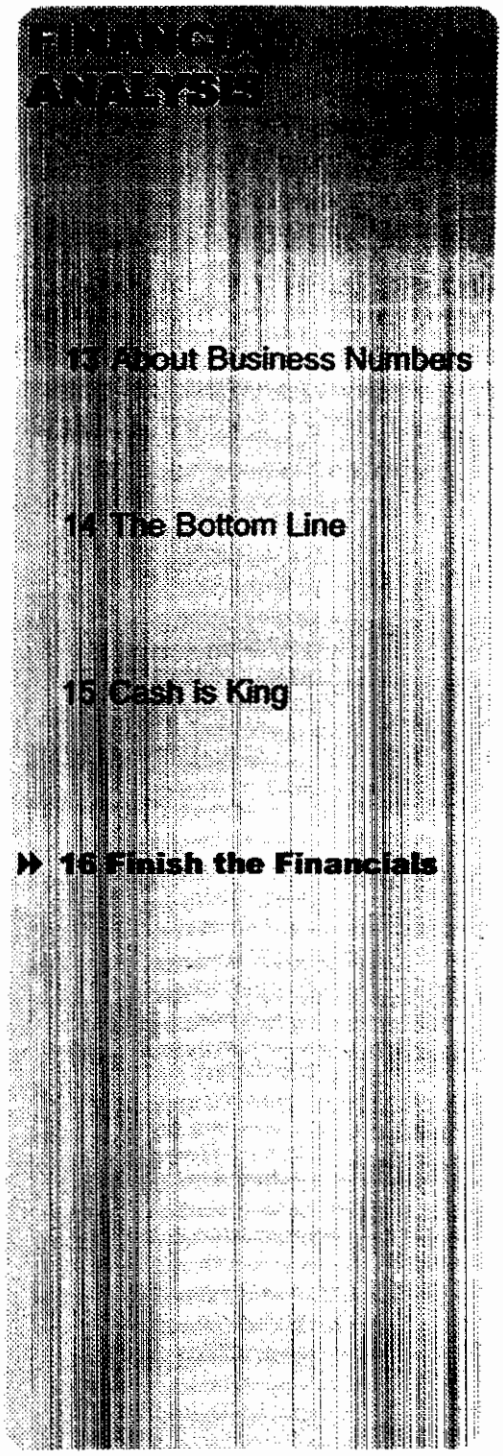
The examples in this and previous chapters describe the way cash flow works. Profits are very important to cash; the more profits, the better the cash, because profits are sales (that generate cash) minus costs and expenses (that cost cash). What is less obvious is the impact of balance sheet items:

- An increase in assets decreases your cash. A decrease in assets increases cash.
- An increase in liabilities increases cash. A decrease in liabilities decreases cash.

These two principals lead eventually to the impact of receivables, inventory, and payables. As you look at your assumptions for the cash flow, keep in mind that every extra dollar of receivables or inventory as assets is a dollar that you don't have in your cash balance. Every dollar in payables is a dollar that you have in cash, too. Although this simple cash model doesn't show the critical impact as clearly as our examples in the previous chapter, the mathematics and financial principals are the same.

Summary

The cash plan is vital, the most critical financial analysis in the business plan. It has to manage the difference between cash and profits. The cash flow stands between income statement and balance sheet, and brings the two together.



Chapter 16:

FINISH THE FINANCIALS

If you've really followed through with the cash plan, your financials are almost done. The balance sheet should be completed by the time you have a cash flow working. Business ratios should be almost automatic too, because they draw all of their information from tables you've already finished.

The Balance Sheet

I showed you some basic balance sheets, first in the previous sections, Chapter 13: About Business Numbers and Chapter 15: Cash is King, because you can't deal with cash without addressing the balance. You've seen then that the Balance Sheet table shows the business' financial position, its assets and liabilities, at a specified time. A standard business plan includes a projected Balance Sheet table for each of the first 12 months in the plan, and for each of the three years.

The ironclad rule of Western double-entry bookkeeping and accounting is that assets are equal to capital and liabilities. This is what balance means.

If you think about it, you'll notice we also used that rule in the Start-up costs section of Chapter 5: Describe Your Company. It comes up again with the Balance Sheet table as we use this rule to calculate retained earnings, which makes the balance correct.

Illustration 16-1 shows the Balance Sheet table, or pro forma Balance Sheet table. The Balance Sheet table should naturally start with either your start-up costs or your ending balance from the previous year, depending on whether you are a start-up company or an ongoing company. Then, for the first 12 months of your plan, it should give detailed projections of your assets, liabilities, and capital as your business progresses. The calculations for this come mainly from your income statement and cash flow. Between those two statements, plus the beginning balances, your Balance Sheet should be virtually done before you start.

Illustration 16-1: Sample Balance Sheet Table

Assets	Start	Jan	Feb	Mar	Apr	May	Jun
Current Assets							
Cash Balance	$55	$15	$21	$7	$15	$93	$53
Accounts receivable	$395	$371	$474	$576	$644	$803	$791
Inventory	$251	$332	$444	$545	$701	$878	$647
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Subtotal	$726	$743	$964	$1,153	$1,385	$1,799	$1,516
Capital assets	$350	$375	$375	$390	$390	$440	$440
Accumulated depreciation	$50	$51	$52	$53	$54	$55	$56
Subtotal	$300	$324	$323	$337	$336	$385	$384
Total Assets	$1,026	$1,067	$1,287	$1,490	$1,721	$2,184	$1,900
Liabilities	**Start**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**
Current liabilities							
Accounts payable	$224	$268	$371	$431	$564	$704	$517
Current notes	$90	$90	$190	$220	$320	$320	$220
Other current liabilities	$15	$15	$15	$15	$15	$15	$15
Subtotal	$329	$373	$576	$666	$899	$1,039	$752
Long-term liabilities	$285	$282	$279	$376	$373	$370	$367
Total Liabilities	$614	$655	$855	$1,042	$1,272	$1,409	$1,119
Capital	**Start**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**
Paid-in capital	$500	$500	$525	$525	$525	$825	$825
Retained earnings	-$163	-$88	-$88	-$88	-$88	-$88	-$88
Earnings	$75	$0	-$5	$11	$12	$38	$44
Total Capital	$412	$412	$432	$448	$449	$775	$781
Capital and Liabilities	$1,026	$1,067	$1,287	$1,490	$1,721	$2,184	$1,900

This illustration shows the first six months of the Balance Sheet table for the sample company we used in the previous chapter (numbers displayed in thousands).

442

Business Ratios

Illustration 16-2 shows the Ratios table. This table calculates several ratios that are common in financial analysis.

Ratios are often misunderstood. They aren't magic. Correct, healthy ratios vary from industry to industry, business to business, depending on the nature of the business. Chapter 8: The Business You're In lists sources for more

Illustration 16-2: The Ratios Table

Gross Margin	22.55%	26.13%	26.72%
Net Profit Margin	2.76%	5.82%	5.53%
Return on Assets	6.73%	13.76%	12.98%
Return on Equity	19.01%	43.84%	32.77%
AR Turnover	3.75	3.75	3.75
Collection Days	65	90	90
Inventory Turnover	5.89	3.76	3.86
Accts Payable Turnover	5.9	5.9	5.9
Total Asset Turnover	5.44	2.45	2.35
Debt Ratios	1999	2000	2001
Debt to Net Worth	1.83	2.17	1.52
Short-term Liab. to Liab.	0.79	0.86	0.91
Liquidity Ratios	1999	2000	2001
Current Ratio	1.67	1.38	1.37
Quick Ratio	0.67	0.52	0.49
Net Working Capital	$881,815	$882,070	$758,509
Interest Coverage	5.45	7.10	7.10
Assets to Sales	0.41	0.41	0.43
Debt/Assets	65%	68%	60%
Current Debt/Total Assets	51%	59%	55%
Acid Test	-0.28	-0.25	-0.31
Asset Turnover	2.44	2.45	2.35
Sales/Net Worth	6.88	7.77	5.93
Dividend Payout	$0	$0	$0

Most standard business plans include some standard business ratios. You should let the computer calculate them.

information on business ratios, including standards for your type of business. Generally, the most important insight gained from ratios is the change in a ratio over time, rather than the specific number at any given time.

While we do explain the standard financial ratios used here, there are better explanations available in financial management textbooks. Experts will almost always agree on the importance of following changes in a ratio over time, and on the wide variations of standards depending on the type of business.

Profitability Ratios

- **Gross Margin:** sales minus cost of sales, expressed as a percentage.
- **Net Profit Margin:** net profit divided by sales, as a percentage.
- **Return on Assets:** net profit divided by the total assets.
- **Return on Equity:** also return on investment (ROI). This ratio divides net profit by net worth.

Return on equity or return on investment (ROI) is probably the most important of these ratios. A business is an investment and it should yield profits comparable to alternative investments, unless there is additional compensation (such as salaries for the owners). In theory, at least, if ROI is low, you should sell the business and put your investment money to better use.

Return on assets and the net profit margin provide a good basis for comparison between your company and the rest of the industry. They are also good indicators of company performance from year to year.

Activity Ratios

- **AR Turnover** (accounts receivables turnover): sales on credit divided by accounts receivable. This is a measure of how well your business collects its debts.
- **Collection Days:** accounts receivable multiplied by 360, then divided by annual credit sales is another measure of debt collection and value of receivables. Generally, 30 days is exceptionally good, 60 days is bothersome, and 90 days or more is a real problem. This varies by industry.
- **Inventory Turnover:** cost of sales divided by the average balance of inventory. The higher the turnover, the better for cash flow and working capital requirements.

- **Accounts Payable Turnover:** a measure of how quickly the business pays its bills. It divides the total new accounts payable for the year by the average accounts payable balance.

- **Total Assets Turnover:** sales divided by total assets.

These ratios are generally used to compare a company's performance to the average for its industry. Levels of acceptability tend to vary widely between different industries. For example, large manufacturing companies might have a very low assets turnover, but retail stores should have a high turnover.

Debt Ratios

- **Debt to Net Worth:** total liabilities divided by total net worth.

- **Short-term Liabilities to Liabilities:** short-term debt divided by total liabilities. This is a measure of the depth and term of debt.

Liquidity Ratios

- **Current Ratio:** short-term assets divided by short-term liabilities. This gives a view of a business' cash position and ability to meet short-term commitments.

- **Quick Ratio:** this is the same as the current ratio, except that inventories are first subtracted from short-term assets before they are divided by short-term liabilities. Many financial experts consider this a better measurement of liquidity than the current ratio, because inventory is so often not convertible to real cash in a short period of time.

- **Net Working Capital:** subtract short-term liabilities from short-term assets. This is another measure of cash position.

- **Interest Coverage:** profit before interest and taxes (operating profit) divided by total interest payments. A measure of how much a business is burdened by servicing its own debt.

These are all measures of the overall financial position of a company and its ability to pay its debt. They are very important to bankers and for loan applications. The acid test (included with additional ratios in the following section) is generally considered the best measure of a company's ability to pay all its obligations without problems. Acceptable measures vary by industry. Some industries are quite heavy on plant and equipment assets, and others (for example, service businesses) have few long-term assets.

445

Additional Ratios

- **Assets to sales:** assets divided by sales.
- **Debt/assets:** total liabilities divided by total assets.
- **Current Debt/Total Assets:** divides total assets by short-term (current) liabilities.
- **Acid Test:** short-term assets (minus accounts receivable and inventory), divided by short-term liabilities.
- **Asset Turnover:** a repetition of the same ratio (Total Asset Turnover) in activity ratios above.
- **Sales/Net Worth:** total sales divided by net worth.
- **Dividend Payout:** dividends divided by net profit.

Break-even Analysis

You prepared a break-even analysis in Chapter 3 Fundamentals: The Mini-Plan. Now it's time to go back to that and review the numbers. Illustration 16-3 shows (again) the standard break-even analysis included in a standard business plan.

Illustration 16-3: Break-even Analysis

Break Even Analysis:	
Monthly Units Break-even	1,222
Monthly Sales Break-even	$397,262
Assumptions:	
Average Per-Unit Revenue	$325.00
Average Per-Unit Variable Cost	$248.07
Estimated Monthly Fixed Cost	$94,035

This section of the model calculates technical break-even points, based on the assumptions for unit prices, variable costs, and fixed costs.

This is a monthly break-even analysis. It assumes monthly fixed costs, and per-unit sales price and variable costs. It uses the standard break-even formulas detailed below, but suggests some modified assumptions. Where standard fixed costs are supposed to be costs that would be sustained even if the business stopped, we suggest you use operating expenses instead. I suggest this change in standard financial analysis because you are better off knowing break-even points on real operations, rather than on some theoretical calculation of fixed expenses.

Units break-even point formula:

Fixed Cost ÷ (Unit Price - Unit Variable Costs)

Sales break-even point formula:

Fixed Cost ÷ (1-(Unit variable Costs/ Unit Price))

The Break-even Chart

The break-even analysis depends on assumptions for fixed costs, unit price, and unit variable costs. These are rarely exact assumptions. This is not a true picture of fixed costs by any means, but is quite useful for determining a break-even point.

The analysis included in the chart in Illustration 16-4 shows a general break-even analysis for assumed fixed costs of $94,035, average per-unit revenue of $325, and average per-unit variable cost of $248.

The line on the chart shows profits increasing and crossing the break-even line at approximately 1,250 units.

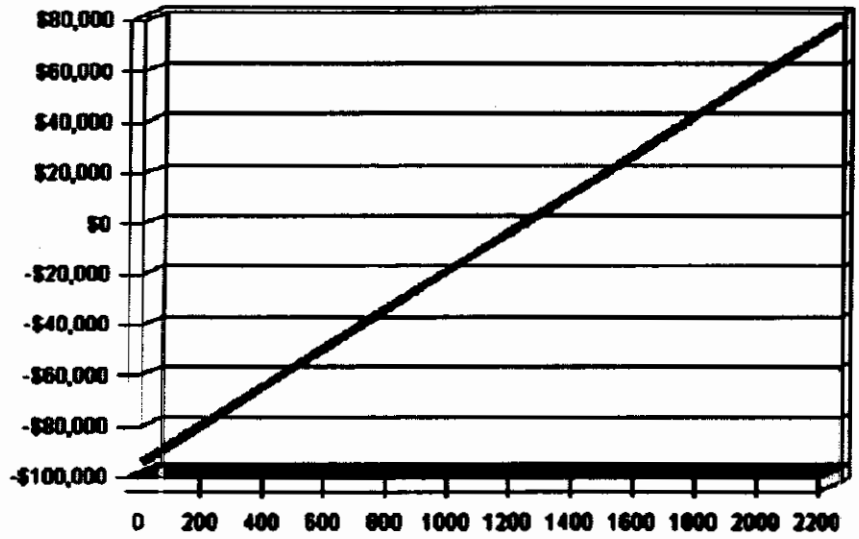
Refine and Polish the Financials

Your financial tables are interrelated. The sales, personnel forecasts, and assumptions affect the profit and loss, the profit and loss affects cash, and the cash and balance sheet work together.

Summary

Financial analysis is rarely a true step-by-step process. You will probably have to go back through your tables to review the assumptions for realism and accuracy. As you revise assumptions, make sure you constantly check back to keep your cash flow positive.

Illustration 16-4: Break-even Chart



This illustration shows the break-even analysis that compares unit sales to profits. It uses data from the table in Illustration 16-3.

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Part 6:

STRATEGY AND TACTICS

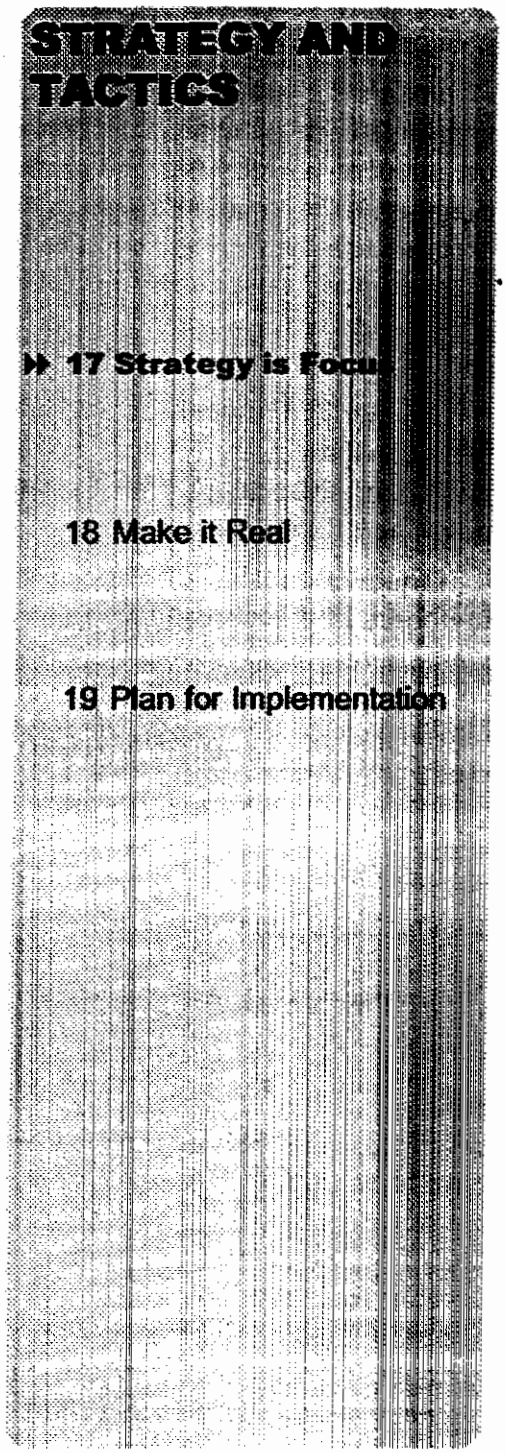
Ch 17: Strategy is Focus

Ch 18: Make it Real

Ch 19: Plan for Implementation

STRATEGY AND TACTICS

Strategy is focus. You also need tactics to implement the strategy, and tactics require concrete milestones and well defined management responsibilities.



Chapter 17:

STRATEGY IS FOCUS

With most of the financials now done, it's time to turn to strategy and tactics. You've been developing strategy throughout, I know, because you can't do the numbers without thinking about the strategy. However, now you want to explain your strategy and develop the implementation. If you refer back to the text outline we discussed in Chapter 2: Pick Your Plan, you probably have several topics still blank in your plan document. But not in your mind. It's time to write your thoughts on strategy and tactics into your text outline.

Define Overall Strategy

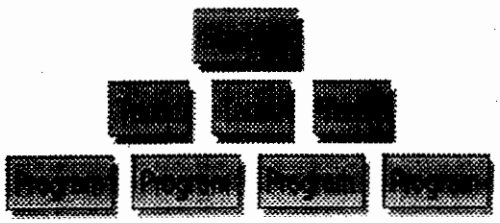
Think of strategy as focus. Of the whole range of possible market segments and the whole range of services and possible sales and marketing activities, which are your main priorities? Avoid making long lists of priorities. More than three or four points makes them more like a laundry list or to-do list than a strategic focus.

451

The Strategy Pyramid

Imagine a pyramid made of three levels. The top of the pyramid is a single box, which contains a strategy. Strategy is an area of resource focus. In the middle level, you have three or so boxes which contain tactics. In the third level, you have four to six boxes that stand for programs. It would look something like Illustration 17-1.

Illustration 17-1: Strategy Pyramid



Don't get lost in defining strategy and tactics. Make the strategic view work logically.

Your definitions don't have to be exact. A strategy is a main focus, which might be on a specific target market, product opportunity, positioning statement, or some other important or fundamental element.

Tactics are there to implement strategies. For example, if a computer store's strategy is to build long-term relationships with business customers, its tactics might include increasing networking , training, and support.

Programs are specific business activities, each of which has concrete dates and responsibilities, and probably a budget. In the computer store example, programs for the strategy might include upgrade mailings, seminars, installation services, network training and others, each of which is built on specifics.

You don't necessarily do a complete business strategy in a single pyramid. Each fundamental business strategy might be a different pyramid.

One important benefit of the pyramid method is integration and alignment. If your strategy is to focus on one thing, you should be able to trace that strategy into its tactics and, most important, into your actual spending and activity priorities. Compare your pyramid strategy and your specific programs, and ask yourself: do your programs match the emphasis you put on strategy?

The Value Proposition

Value-based marketing is another conceptual framework. Like the pyramid described in the previous topic, it doesn't have to be in your business plan at all, but we add it here because some people find that the framework helps them develop their strategy. Obviously, this has to be a quick treatment. There are textbooks written about value-based marketing, and the business literature on this topic is rich and varied.

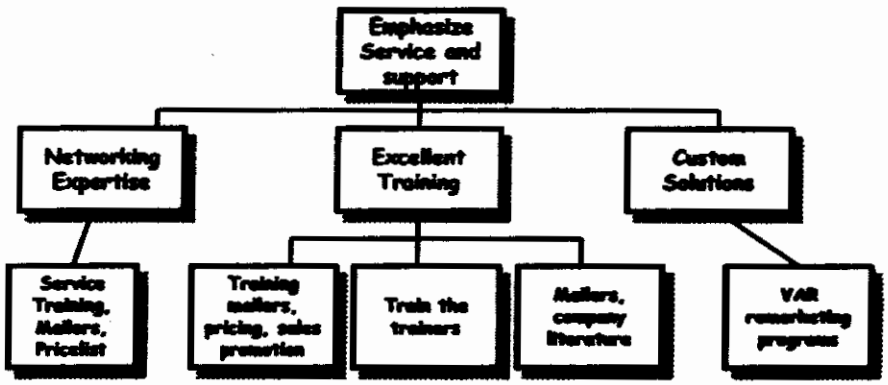
This framework begins with defining your business offering as a value proposition. The value proposition is benefit offered minus price charged, in relative terms. The definition encourages you to think in broad conceptual terms, with emphasis on the real benefit offered, rather than the specific tangible. For example, a national fast food chain probably offers the value of convenience and reliability, probably at a slight price premium (at least when compared to the weaker chains). A prestigious local restaurant, on the other hand, is offering a completely different set of benefits (luxury, elegance, and prestige, for example) at a marked price premium. A graphic designer is probably selling benefits related to communication and advertising, not just drawings.

Once you have a value proposition defined, look at your business—and your business plan—in terms of how you:

1. Communicate the business proposition; and
2. Fulfill your promise.

For example, if a computer store's business proposition has to do with reliable service for small business, peace of mind, and long-term relationships, then it probably shouldn't be taking out full-page newspaper advertisements promising the lowest prices in town on brand-name hardware. It probably should communicate that proposition with sales literature that emphasizes how the computer store will become a strategic ally of its clients. It might also think twice about how it handles overdue bills from customers, who might really be holding out for more service or better support. Illustration 17-2 shows how the store might lay out its strategy.

Illustration 17-2: Sample Strategy Pyramid



The computer store strategy is to emphasize service and support for its customers.

Like the pyramid, the framework helps you integrate your planned programs into a logical whole plan.

Define Marketing Strategy

Your marketing strategy normally involves target market focus, emphasis on certain services or media, or ways to position your company and your service uniquely.

Your marketing strategy depends a great deal on which market segments you've chosen as target market groups. You covered this in detail in Chapter 9: Know Your Market and Chapter 11: Market. You may also have developed strategy using the pyramid or value proposition. Obviously, you want to make sure to preserve the same basic focus and themes.

Aside from the target market strategy, your marketing strategy might also include the positioning statement, pricing, promotion, and whatever else you want to add. You might also want to look at media strategy, business development, or other factors. Strategy is creative, and hard to predict. The material below will give you more ideas.

Positioning Tactics

Positioning Tactics can be a good way to define your marketing strategy. The tactics should include a strategic focus on the most important target market, that market's most important market need, how your product meets that need, what is the main competition, and how your product is better than the competition. Consider this template:

For [target market description] who [target market need], [this product] [how it meets the need]. Unlike [key competition], it [most important distinguishing feature].

For example, the positioning statement for the original *Business Plan Pro*™, in 1994, was: "For the businessperson who is starting a new company, launching new products or seeking funding or partners, *Business Plan Pro*™ is software that produces professional business plans quickly and easily. Unlike [name omitted], *Business Plan Pro*™ does a real business plan, with real insights, not just cookie-cutter fill-in-the-blanks templates."

Pricing Tactics

You ought to provide detail on product pricing, and relate pricing to strategy. Your value proposition, for example, will normally include implications about relative pricing, and therefore, you should check whether your detailed product-by-product pricing matches the implied pricing in the value proposition. Pricing is also supposed to be intimately related to the positioning statement in the previous topic, since pricing is probably the most important factor in product positioning.

Promotion Tactics

Think of promotion in a broader sense than simply sales promotion. Think of how you spread the word about your business to your future customers. Think of it in the broader context, including the whole range of advertising, public relations, events, direct mail, seminars, and sales literature.

Think strategically. What is your strategy on communicating with people? Do you look for expensive ads in mass media, targeted marketing in specialized publications, or even more targeted with direct mail? Do you have a way to leverage the news media, or reviewers? Do you advertise more effectively through public relations events, trade shows, newspaper, or radio? What about telemarketing, the World Wide Web, or even multilevel marketing?

Are you satisfied with how this is working for you now, or is it a problem area that needs to be addressed? Are you meeting your needs, and in line with your opportunities?

How does your promotion strategy fit with the rest of your strategy? Check for alignment between what you say here and what you say in your strategy pyramid, and your value proposition. As you described market trends and target market segments, did you see ways to improve your promotion strategy?

Define Sales Strategy

Describe sales strategy as different from marketing strategy. To help differentiate between marketing strategy and sales strategy, think of marketing strategy as the broader effort of generating sales leads on a large scale, and sales strategy as the efforts to bring those sales leads into the system as individual sales transactions. Marketing might affect image and awareness and propensity to buy, while sales should close the deals and get the order that marketing opens.

Summary

Sales tactics deal with how and when to close sales prospects, how to compensate sales people, how to optimize order processing and database management, how to maneuver price, delivery, and conditions.

As with your marketing strategy, your sales strategy depends a great deal on which market segments you've chosen as target market groups. Obviously, you don't sell major deals to large companies the same way you sell cereal boxes off grocery store shelves. Think about how you sell in your business. What is your strategy for optimizing your way of selling?

455

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STRATEGY AND TACTICS

17 Strategy is Focus

18 Make it Real

19 Plan for Implementation

Chapter 18:

MAKE IT REAL

At this point, you've been through the main thinking and analysis. It is time to put some bite into your plan and management by listing specific actions to be taken.

Implementation Milestones

Each action is called a milestone. This is where a business plan becomes a real plan with specific and measurable activities, instead of just a document. Give it as many milestones as you can think of to make it more concrete. Give each milestone a name, a person responsible, a milestone date, and a budget. Then make sure that all your people know that you will be following the plan and tracking plan-vs.-actual results. If you don't follow up, your plan will not be implemented.

The value of a plan is measured in its implementation.

The Milestones table should be the most important section of the entire business plan. Each marketing and sales-related program you plan should be listed in the table and explained in the related text, along with relevant details. You want to cement your sales strategy with programs that make it real. How is this strategy

to be implemented? Do you have concrete and specific plans? How will implementation be measured?

In the sample table in Illustration 18-1, you see columns reserved for evaluating the actual results and the difference between plan and actual results, for each program. You can also track actual spending and milestone dates.

Manage Your Summaries

Each of your business plan chapters should begin with a summary paragraph that describes all the high points of the chapter. A good strategy and implementation chapter probably includes several summaries, one for strategy overall, one for marketing strategy, and one for sales strategy. As you develop these summaries, keep in mind that many business plan readers will read only the summaries that begin each chapter. You should make sure to include all the important points that you need to make, even for browsers who don't read every word.

One of the best tactics in preparing a business plan is to write your chapter summaries well enough to use them by themselves as the core of a Summary Memo document. In seeking investment, for example, you will need to have a

Illustration 18-1: Milestones Table

Business Plan Milestones: Milestone	Manager	Planned Date	Department	Budget	Actual Date	Actual Budget	Date Variance	Budget Variance
Corporate identity	TJ	12/17/98	Marketing	$10,000	1/15/99	$12,004	(29)	($2,004)
Seminar implementation	IR	1/10/99	Sales	$1,000	12/27/98	$1,000	14	$0
Business plan review	RJ	1/10/99	GM	$0	1/23/99	$500	(13)	($500)
Upgrade mailer	IR	1/16/99	Sales	$5,000	2/12/99	$1,000	(27)	$4,000
New corporate brochure	TJ	1/16/99	Marketing	$5,000	1/15/99	$5,000	1	$0
Delivery vans	SD	1/25/99	Service	$12,500	2/26/99	$0	(32)	$12,500
Direct mail	IR	2/16/99	Marketing	$3,500	2/25/99	$1,000	(9)	$2,500
Advertising	RJ	2/16/99	GM	$115,000	3/6/99	$100,000	(18)	$15,000
X4 Prototype	SG	2/25/99	Product	$2,500	2/25/99	$1,000	0	$1,500
Service revamp	SD	2/25/99	Product	$2,500	2/25/99	$2,500	0	$0
6 Presentations	IR	2/25/99	Sales	$0	1/10/99	$1,000	46	($1,000)
X4 Testing	SG	3/6/99	Product	$1,000	1/16/99	$0	49	$1,000
3 Accounts	SD	3/17/99	Sales	$0	3/17/99	$2,500	0	($2,500)
L30 prototype	PR	3/26/99	Product	$2,500	4/11/99	$15,000	(16)	($12,500)
Tech99 Expo	TB	4/12/99	Marketing	$15,000	1/25/99	$1,000	77	$14,000
VP S&M hired	JK	6/11/99	Sales	$1,000	7/25/99	$5,000	(44)	($4,000)
Mailing system	SD	7/25/99	Service	$5,000	7/14/99	$7,654	11	($2,654)
Other								
Totals				$181,000		$155,158	10	$25,342

These are the milestones, the heart and core of the business plan.

Summary Memo that describes the complete plan in just a few pages. You should be able to pick out your summary paragraphs and use them to create the Summary Memo.

The Executive Summary is the most important of your chapter summaries. It is the doorway to the rest of the plan. Get it right or your target readers will go no further. The best length is a single page. Emphasize the main points of your plan and keep it brief.

Long-Term Plan

While you're involved with summaries, consider adding a discussion of long-term plans. How do you expect your company to change over the next 5, 10, or 20 years? What are the important drivers of change? What is your company doing to position itself to manage and even thrive on future growth?

I don't recommend including financial details beyond three years in a business plan. At the most, a brief summary of a five-year plan in text is sufficient. However, this is not because I don't believe in long-term planning. Far from it. Businesses should indeed plan for longer than three years, but the long-term plans running five years or more work better in different formats. They are much less dependent on specific information, and specific business numbers.

Summary

Is your strategy a reflection of your company's strengths and weaknesses? Make it consistent and realistic.

A mediocre strategy implemented well and with consistency will always beat a brilliant strategy never implemented.

Check your plan for consistency throughout. Does your spending reflect your strategy? Do your numbers, including your sales forecast, expense forecast, and personnel plan, reflect your strategy?

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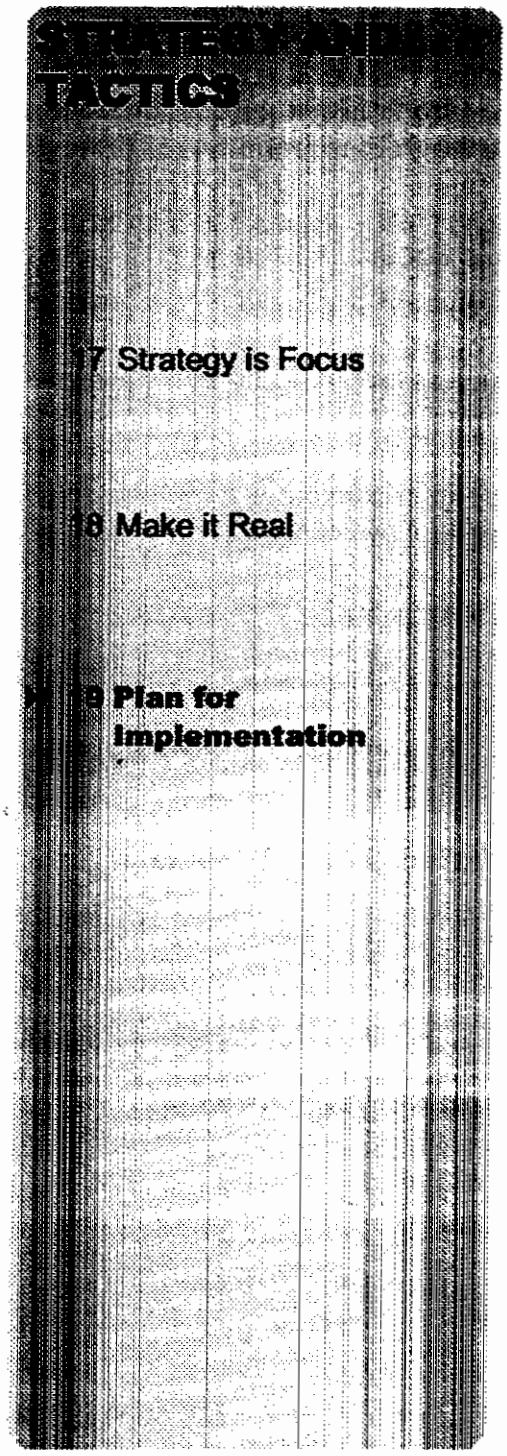


Chapter 19:

PLAN FOR IMPLEMENTATION

Some plans are more likely to be implemented than others. Successful implementation starts with a good plan, one that is full of specific information on milestones, managers, responsibilities, dates and budgets. Beyond the plan itself, however, there are other factors also critical to implementation. Are you going to track results, comparing the planned results to the actual results? Are you going to follow up with your management team, making revisions and checking on performance?

Start With a Good Plan

Illustration 19-1 shows a view of what it takes to develop and implement a business plan. I call this planning for implementation. There are some important factors beyond the plan that are also critical:

1. Is the plan simple? Is it easy to understand and to act on? Does it communicate its contents easily and practically?

2. Is the plan specific? Are its objectives concrete and measurable? Does it include specific actions and activities,

461

each with specific dates of completion, specific persons responsible and specific budgets?

3. Is the plan realistic? Are the sales goals, expense budgets, and milestone dates realistic? Nothing stifles implementation like unrealistic goals.

4. Is the plan complete? Does it include all the necessary elements? Requirements of a business plan vary, depending on the context. There is no guarantee, however, that the plan will work if it doesn't cover the main bases.

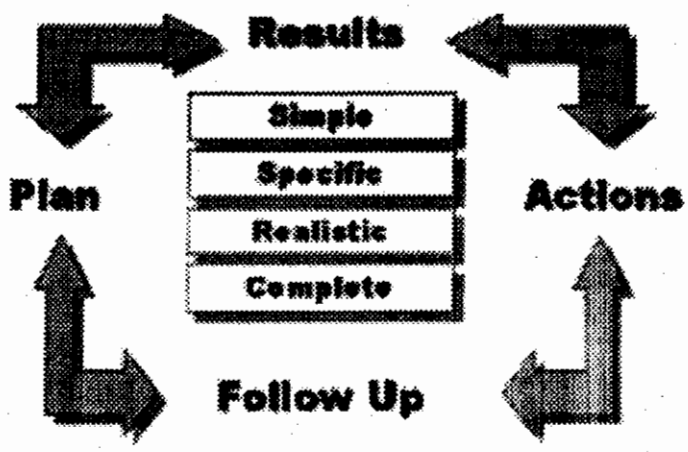
Track and Follow Up

Ironically, a good plan alone isn't enough. Illustration 19-1 indicates other elements that are also critical. Even a good plan means virtually nothing if somebody doesn't follow up on its concrete and specific milestones or results. A plan won't be implemented unless responsibilities are assigned to specific people, milestones are established and agreed upon, and the people responsible know that somebody will follow up to check on results.

Keep Your Plan Alive

A business plan is a living document. As you review implementation results with the people responsible, you will

Illustration 19-1: Implementation Isn't Automatic



A business plan will be hard to implement unless it is simple, specific, realistic and complete. Even if it is all these things, a good plan will need someone to follow up and check on it.

PAGE PB

162

often find the need to set new goals and make course corrections. Keep track of the original plan and manage changes carefully. Although changes should be made only with good reason, don't be afraid to update your plan and keep it alive. We recommend using a computer for your financials so you can easily make changes, as described below.

Prescription for Live Planning

1. After your plan starts, type actual results into the sales forecast, balance sheet, profit and loss, and cash plan. Watch what the plan vs. actual worksheets tell you.

2. Note when actual results indicate you need to make changes.

3. Stay in the Actual mode and make adjustments to future months of your Actual cash plan. After all, it is already more accurate than the original plan because it has actual results for the months already completed.

4. As each month closes, type actual results over your revised plan numbers into the Actual area.

The Starting Sales Plan

The example begins in Illustration 19-2 with the sales forecast portion of a finished business plan.

Illustration 19-2: Starting Sales Plan

Systems	85	115	145
Service	200	200	200
Software	150	200	250
Training	145	155	165
Other	160	176	192

Systems	$2,000	$2,000	$2,000
Service	$75	$69	$58
Software	$200	$200	$200
Training	$37	$35	$39
Other	$300	$300	$300

Systems	$170,000	$230,000	$290,000
Service	$15,000	$13,800	$11,600
Software	$30,000	$40,000	$50,000
Training	$5,365	$5,425	$8,435
Other	$48,000	$52,800	$57,600

To set the scene, this illustration shows the sales forecast as the business plan is finished.

Actual Results for Sales

In Illustration 19-3, we see the actual results for the same company for the first three months of the plan.

Illustration 19-3: Actual Sales Results

Unit Sales	Jan	Feb	Mar
Systems	63	74	108
Service	168	171	174
Software	174	235	289
Training	156	171	183
Other	162	151	220
Total Unit Sales	723	802	974
Unit Prices			
Systems	$1,783	$1,801	$1,791
Service	$103	$106	$88
Software	$224	$185	$277
Training	$48	$39	$46
Other	$291	$371	$222
Sales			
Systems	$112,329	$133,274	$193,428
Service	$17,304	$18,126	$15,312
Software	$38,976	$43,475	$80,053
Training	$7,488	$6,669	$8,418
Other	$47,142	$56,021	$48,840
Total Sales	$223,239	$257,565	$346,051

The actual sales flow at the end of March shows actual cash flow numbers plus adjustments and course corrections.

Plan vs. Actual Sales

Illustration 19-4 shows you the plan vs. actual results (or variance) for our hypothetical company.

Illustration 19-4: Sales Variance

Unit Sales	Jan	Feb	Mar
Systems	(22)	(41)	(37)
Service	(32)	(29)	(26)
Software	24	35	39
Training	11	16	18
Other	2	(25)	28
Total Unit Sales	(17)	(44)	22
Unit Prices			
Systems	($217)	($199)	($209)
Service	$28	$37	$30
Software	$24	($15)	$77
Training	$11	$4	$7
Other	($9)	$71	($78)
Sales			
Systems	($57,671)	($96,726)	($96,572)
Service	$2,304	$4,326	$3,712
Software	$8,976	$3,475	$30,053
Training	$2,123	$1,244	$1,983
Other	($858)	$3,221	($8,760)
Total Sales	($46,126)	($84,460)	($69,584)

Variance shows plan vs. actual results. Actual results are subtracted from budget results, leaving negative numbers when the sales were less than budget.

As you look at the variance for the sales forecast for the first three months, you should see several important trends:

1. Unit sales of systems are disappointing, well below expectations.
2. The average revenue for systems sales is also disappointing.
3. Unit sales for service are disappointing, but dollar sales are way up.
4. Sales are well above expectations for software and training.

Adjusting the Sales Plan

One of the main advantages of creating a plan on a computer is how easily you can change it. Month by month, as you record your actual results, you can make changes to your plan in the future months of the actual tables, preserve the plan tables, and be able to see the plan vs. actual variance. Illustration 19-5 shows how this company makes its course corrections.

Illustration 19-5: Adjusted Sales Plan in Actual Table

Systems	63	74	108	150	200
Service	168	171	174	175	225
Software	174	235	289	375	450
Training	156	171	183	200	250
Other	162	151	220	240	200
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Systems	$1,783	$1,801	$1,791	$1,775	$1,775
Service	$103	$106	$88	$90	$90
Software	$224	$185	$277	$275	$275
Training	$48	$39	$46	$50	$50
Other	$291	$371	$222	$300	$300
Systems	$112,329	$133,274	$193,428	$268,250	$355,000
Service	$17,304	$18,126	$15,312	$15,750	$20,250
Software	$38,976	$43,475	$80,053	$103,125	$123,750
Training	$7,488	$6,669	$8,418	$10,000	$12,500
Other	$47,142	$56,021	$48,840	$72,000	$60,000
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

The illustration shows revisions in the April and May columns, even before they happen, to reflect the changes shown in the January-March period.

465

Compare the difference in the February and March columns in Illustration 19-2, the original plan, and Illustration 19-5, the actual results area.

In this example, if the company knows by March that sales will be different than planned in April, they should estimate the revised forecast, as a correction to future results. When the actual results are available, they can replace revised plan numbers with actual results. The actual results area can then become a plan area for course corrections.

In Illustration 19-5, notice how the forecast has been revised for April and May. Since the company knew systems sales would be down, they planned on it and made a revised forecast in the actuals area. The same revision affects projected profits, balance sheet, and—most important—cash.

Catching Trends As They Develop

Illustration 19-6 shows the plan vs. actual cash for the same sample plan shown in the previous illustrations.

Illustration 19-6: Plan vs. Actual Cash Flow

	Jan	Feb	Mar	Apr	May
Net Profit	$6,850	($24,952)	$8,339	$36,752	$43,097
Plus:					
Depreciation	$1,000	$1,010	$1,020	$1,030	$1,040
Change in Accounts Payable	($22,692)	$93,431	$58,509	$109,308	$122,353
Current Borrowing (repayment)	$0	$100,000	$30,000	($50,000)	$45,000
Increase (decrease) Other Liabilities	$0	$0	$0	$0	$0
Long-term Borrowing (repayment)	($2,942)	($2,962)	$97,017	($3,005)	($3,026)
Capital Input	$0	$25,000	$0	$0	$300,000
Subtotal	($17,783)	$191,527	$194,884	$94,086	$508,465
Less:					
Change in Accounts Receivable	($163,917)	$35,549	$91,638	$89,729	$115,438
Change in Inventory	$7,391	$60,936	$109,654	$138,607	$154,543
Change in Other ST Assets	$0	$0	$0	$0	$0
Capital Expenditure	$25,000	$0	$15,000	$0	$50,000
Dividends	$0	$0	$0	$0	$0
Subtotal	($131,526)	$96,485	[illegible]	$228,336	$319,981
Net Cash Flow	$113,743	$95,042	[illegible]	($134,251)	$188,483
Cash Balance	$169,175	$264,217	$242,809	$108,559	$297,042

The plan vs. actual cash flow shows how much can change, in the real world, despite good planning. A company needs to adjust to change by keeping its plan live.

PAGE PB

466

You can see in this illustration how much the cash flow changed as the sales came out different from plan. The company had to make significant adjustments to its short-term credit management in order to compensate for changed plans. It postponed payments of short-term debt on its credit line and planned on additional adjustments with the short-term credit line. This points out the importance of keeping a live plan and making adjustments. The projected cash flow in the revised scenario is acceptable to the bank, if planned in advance.

Tracking variances is the best way to follow through in order to assure implementation and the success of the business plan.

The Starting Plan for Profit and Loss

Following the example in this chapter, Illustration 19-7 shows a portion of the profit and loss for the sample company, as it stood in the plan.

Illustration 19-7: Planned Profit and Loss

Sales	$268,365	$342,025	$415,635	$501,680	$643,985
Direct Cost of Sales	$184,495	$249,045	$307,595	$398,070	$503,215
Production payroll	$9,500	$9,500	$9,500	$9,500	$9,500
Other	$500	$500	$500	$500	$500
Total Cost of Sales	$194,495	$259,045	$317,595	$408,070	$513,215
Gross Margin	$73,870	$82,980	$98,040	$93,610	$130,770
Gross Margin %	27.53%	24.26%	23.59%	18.66%	20.31%
Sales and Marketing expenses:					
Payroll	$24,000	$24,000	$24,000	$24,000	$24,000
Ads	$5,000	$5,000	$7,000	$10,000	$15,000
Catalog	$2,000	$3,000	$2,000	$2,000	$2,000
Mailing	$3,000	$11,800	$5,500	$10,500	$10,500
Promo	$0	$0	$0	$0	$0
Shows	$0	$0	$0	$0	$0
Literature	$0	$7,000	$0	$0	$0
PR	$0	$0	$0	$1,000	$0
Seminar	$1,000	$0	$0	$5,000	$5,000
Service	$2,000	$1,000	$1,000	$500	$2,500
Training	$450	$450	$450	$450	$450

This table shows the gross margin and sales and marketing expense area of the original plan. This is a portion of the full table.

Profit and Loss Actual Results

Illustration 19-8 shows the actual results recorded in that portion of profit and loss, after the end of March. Looking at Illustration 19-8, the actual results illustration means little without comparison to the original budget in Illustration 19-7.

Unfortunately, many businesses also forget to compare the original to the actual. Especially if business is going well—the operation shows a profit, and cash flow is satisfactory—comparisons with the original budget are made poorly or not at all.

Illustration 19-8: Actual Profit and Loss Results

	Jan	Feb	Mar	Apr	May
Sales	$223,239	$257,565	$346,051	$467,125	$571,500
Direct Cost of Sales	$141,394	$176,275	$240,051	$321,100	$411,250
Production payroll	$9,308	$9,224	$9,759	$9,500	$9,500
Other	$33	$782	$436	$500	$500
Total Cost of Sales	$150,735	$186,281	$250,246	$331,100	$421,250
Gross Margin	$72,504	$71,284	$95,805	$136,025	$150,250
Gross Margin %	32.48%	27.68%	27.69%	29.12%	26.29%
Sales and Marketing expenses:					
Payroll	$23,456	$24,529	$23,871	$24,000	$24,000
Ads	$0	$22,674	$7,896	$10,000	$15,000
Catalog	$2,200	$3,100	$2,095	$2,000	$2,000
Mailing	$1,873	$12,075	$6,621	$10,500	$10,500
Promo	$0	$0	$0	$0	$0
Shows	$0	$0	$0	$0	$0
Literature	$0	$0	$6,401	$0	$0
PR	$0	$0	$0	$1,000	$0
Seminar	$1,000	$0	$0	$5,000	$5,000
Service	$0	$3,023	$1,023	$500	$2,500
Training	$0	$1,000	$500	$450	$450
Total Sales & Mktg Expenses	$28,529	$66,401	$48,407	$53,450	$59,450

The illustration shows actual results on the actual worksheet. Note how actual sales, costs, and expenses are different from planned results. This is a portion of the full table.

Profit and Loss Plan vs. Actual

Illustration 19-9 shows the variance in expenses. The actual results are subtracted from the budget numbers, leaving negative numbers when the actual spending was more than budget or when the sales or profits were less than budget.

Variances are calculated differently in different portions of the plan.

- In expense rows, variance becomes the planned amount minus the actual amount. Lower expenses are a positive variance.
- In the profits and sales areas, variance becomes actual amount minus planned amount. In these cases, higher sales are a positive variance.

Illustration 19-9: Planned vs. Actual Profit and Loss

Sales	($45,126)	($84,460)	($69,584)	($34,555)	($72,485)
Direct Cost of Sales	$43,101	$72,770	$67,544	$76,970	$91,965
Production payroll	$192	$276	($259)	$0	$0
Other	$467	($282)	$64	$0	$0
Total Cost of Sales	$43,760	$72,764	$67,349	$76,970	$91,965
Gross Margin	($88,886)	($157,224)	($136,933)	($111,525)	($164,450)
Gross Margin %	196.97%	186.15%	196.79%	322.75%	226.87%
Sales and Marketing expenses:					
Payroll	$544	($529)	$129	$0	$0
Ads	$5,000	($17,674)	($896)	$0	$0
Catalog	($200)	($100)	($95)	$0	$0
Mailing	$1,127	($275)	($1,121)	$0	$0
Promo	$0	$0	$0	$0	$0
Shows	$0	$0	$0	$0	$0
Literature	$0	$7,000	($6,401)	$0	$0
PR	$0	$0	$0	$0	$0
Seminar	$0	$0	$0	$0	$0
Service	$2,000	($2,023)	($23)	$0	$0
Training	$450	($550)	($50)	$0	$0

The illustration shows a portion of the Profit and Loss Variance. March results showed sales below plan and costs above plan, for a large negative variance. Sales and Marketing expenses were also above plan in March, causing another negative variance. This is a portion of the table.

Understanding Variance Analysis

Variance is the frequently-forgotten other half of budgeting. Many businesses, especially the small, entrepreneurial kind, ignore or forget the other half of the budgeting. Budgets are too often proposed, discussed, accepted, and forgotten. Variance analysis looks after-the-fact at what caused a difference between plan vs. actual. Good management looks at what that difference means to the business.

Variance analysis ranges from simple and straightforward to sophisticated and complex. Some cost-accounting systems separate variances into many types and categories. Sometimes a single result can be broken down into many different variances, both positive and negative.

The most sophisticated systems separate unit and price factors on materials, hours worked, cost-per-hour on direct labor, and fixed and variable overhead variances. Though difficult, this kind of analysis can be invaluable in a complex business.

Look for Specifics

This presentation of variances shows how important good analysis is. In theory, the positive variances are good news because they mean spending less than budgeted. The negative variance means spending more than the budget.

Variance Analysis for Sample Company

In our earlier example, the $5,000 variance in advertising in January means $5,000 less than planned was spent, and the $7,000 positive variance for literature in February means $7,000 less than planned was spent. The negative variance for advertising in February and March, and the negative variance for literature in March, show that more was spent than was planned for those items.

Evaluating these variances takes thought. Positive variances aren't always good news. For example, the positive variance of $5,000 in advertising means that money wasn't spent, but it also means that advertising wasn't placed. Systems sales are way below expectations for this same period—could the advertising missed in January be a possible cause? For literature, the positive $7,000 in February may be evidence of a missed deadline for literature that wasn't actually completed until March. If so, at least it appears that the costs on completion were $6,401, a bit less than the $7,000 planned.

Among the larger single variances for an expense item in a month shown on the illustration was the positive $7,000 variance for the new literature expenses in February. Is this good news or bad news?

Every variance should stimulate questions. Why did one project cost more or less? Were objectives met? Is a positive variance a cost saving or a failure to implement? Is a negative variance a change in plans, a management failure, or an unrealistic budget?

A variance table can provide management with significant information. Without this data, some of these important questions might go unasked.

More on Variance

For purposes of example, Illustration 19-10 shows the sales table (including costs) in variance mode, for the sales forecast of our hypothetical company. Variance analysis on sales can be very complex. There can be very significant differences between higher or lower sales because of different unit volumes, or because of different average prices.

The units variance shows that the sales of systems were disappointing. In the expenses outlined in Illustration 19-9, we see that advertising and mailing costs were below plan. Could there be a correlation between the saved expenses in mailing, and the lower-than-planned sales? Yes, of course there could.

The mailing cost was much less than planned, but as a result the planned sales never came. The positive expense variance is not good for the company.

Illustration 19-10: Sales Forecast Variance

[illegible]			
Systems	(22)	(41)	(37)
Service	(32)	(29)	(26)
Software	24	35	39
Training	11	16	18
Other	2	(25)	28
[illegible]			
[illegible]			
Systems	($217)	($199)	($209)
Service	$28	$37	$30
Software	$24	($15)	$77
Training	$11	$4	$7
Other	($9)	$71	($78)
Sales			
Systems	($57,671)	($86,726)	($86,572)
Service	$2,304	$4,326	$3,712
Software	$8,976	$3,475	$38,853
Training	$2,123	$1,244	$1,983
Other	($858)	$3,221	($8,768)
Total [illegible]			
[illegible]			
Systems	$65.95	$16.89	$42.67
Service	($2.79)	($4.71)	$7.77
Software	$16.87	$25.97	$4.44
Training	$4.49	($8.25)	$1.85
Other	$3.86	($17.28)	$13.10
[illegible]			
Systems	$41,[illegible]	$76,513.00	$67,[illegible]
Service	$406.00	$835.00	$2,912.00
Software	$55.00	$1,962.00	($3,[illegible])
Training	$[illegible]	($210.00)	$141.00
Other	$413.00	($361.00)	$381.00
Sub-total [illegible]	$43,101	$72,770	$67,544

The illustration shows the sales variance, including costs, for the example used in other illustrations in this section.

171

In systems, the comparison between units variance and sales variance yields no surprises. The lower-than-expected unit sales also had lower-than-expected sales values. Compare that to service, in which lower units yielded higher sales (indicating much higher prices than planned). Is this an indication of a new profit opportunity, or a new trend? This clearly depends on the specifics of your business.

It is often hard to tell what caused differences in costs. If spending schedules aren't met, variance might be caused simply by lower unit volume. Management probably wants to know the results per unit, and the actual price, and the detailed feedback on the marketing programs.

Measure a Plan by its Implementation

The quality of a business plan is measured, not by the quality of its ideas, its analysis, or presentation, but only by the implementation it causes. It is true, of course, that some business plans are developed only as selling documents to generate financial resources. For these plans, their worth is measured by their effectiveness in selling a business opportunity to a prospective investor. For plans created to help run a business, their worth is measured by how much they help run a business—or, in other words, their implementation.

PAGE PB

Summary

Variance analysis is vital to good management. You have to track and follow up on budgets, mainly through variance analysis, or the budgets are useless.

Although variance analysis can be very complex, the main guide is common sense. In general, going under budget is a positive variance, and over budget is a negative variance. But the real test of management should be whether or not the result was good for business.

Part 7:

Following Up

Ch 20: Print and Publish

Ch 21: Getting Financed

473

FOLLOWING UP

Ultimately, the impact of your plan depends on how you manage and implement it, how it's presented, and to whom.

FOLLOWING UP

» 20 Print and Publish

21 Getting Financed

Chapter 20:

PRINT AND PUBLISH

So you're about ready to print your plan. Assemble your topics as indicated in the outline in Chapter 2, Pick Your Plan. Browse through the sample plans and look in the Workbook to get a better sense of the topic sequence. Throughout this book, we have discussed portions of the plan in the order that you work on it, not in the final order it will print.

Please make sure to run it through a final critical edit. Then make sure to publish it so that commitments made by managers are clearly known and acknowledged. Also make it clear that you will be tracking results, comparing your actual results to the planned results, and discussing the difference

Publishing Management

Don't forget the process of publishing within your own company. In this case, publishing means distributing the plan where all the managers can see it. People who make commitments as part of the plan need to see those commitments on record. They need to know that the plan will be tracked and that the difference between planned and actual results will be calculated and discussed.

475

Final Edit

Always run a business plan through a final edit. Have you read it over again? Do you have someone who can read it for you? Sometimes you don't see the errors because you are too close to it.

Check the numbers in your charts and tables. Make sure they match each other, and go back and check the references to numbers in the text. For example, your objectives text might set sales objectives of $500,000, but your plan tables show sales projections of $400,000.

Presentation

Presentation is important but only to communicate content. Good charts are dynamite when they make numbers easier to read quickly, and they can be essential when numbers are complex.

Good text formatting should make the text easy to read. Use a legible font and a good mix of section headings and subheadings to make the organization visible. Bullet points are generally easier to read than long paragraphs. Color is good for charts, when it makes numbers easier to understand, but gets in the way when used for text.

Fancy paper, expensive binding, and excessive presentation is not needed. Make the paper whatever quality it takes to make the plan easy to read, avoiding some of the more fibrous papers that end up interfering with the printed content. Make the binding a good coil, or some other binding that will hold up to use, but keep it practical so you impress with content, not expense.

Related Documents

In the process of finding investment financing people normally use a two-to-four-page Summary Memo. It should have the key points, such as competitive edge, market needs, defensibility, and of course track records and resumes of main team members. Focus on real content, not hype, and organize it so that potential investors can understand the main points quickly, then decide whether or not they want to know more.

When looking for loans, you may want to prepare a two-to-four-page document, called a Loan Application. It should include the Executive Summary and company ownership detail as well as financials, such as Profit and Loss and Balance Sheet tables.

Summary

Review your plan from the point of view of the business purpose. Does it cover what you need it to cover? Are there topics the plan's audience will ask about that you haven't covered? Think of the three most important questions you would expect to get from your intended reader. Have you answered them?

FOLLOWING UP

20 Print and Publish

» 21 Getting Financed

Chapter 21:

GETTING FINANCED

Contrary to popular belief, business plans do not generate business financing. True, there are many kinds of financing options that require a business plan, but nobody invests in a business plan. Investors need a business plan as a document that communicates ideas and information, but they invest in a company, in a product, and in people.

Time Value of Money, NPV, and IRR

Venture capitalists and many other investors look to Net Present Value (NPV) or Internal Rate of Return (IRR) to measure their investment return. If you are developing a business plan for use with investors then you need to know and understand these measurements.

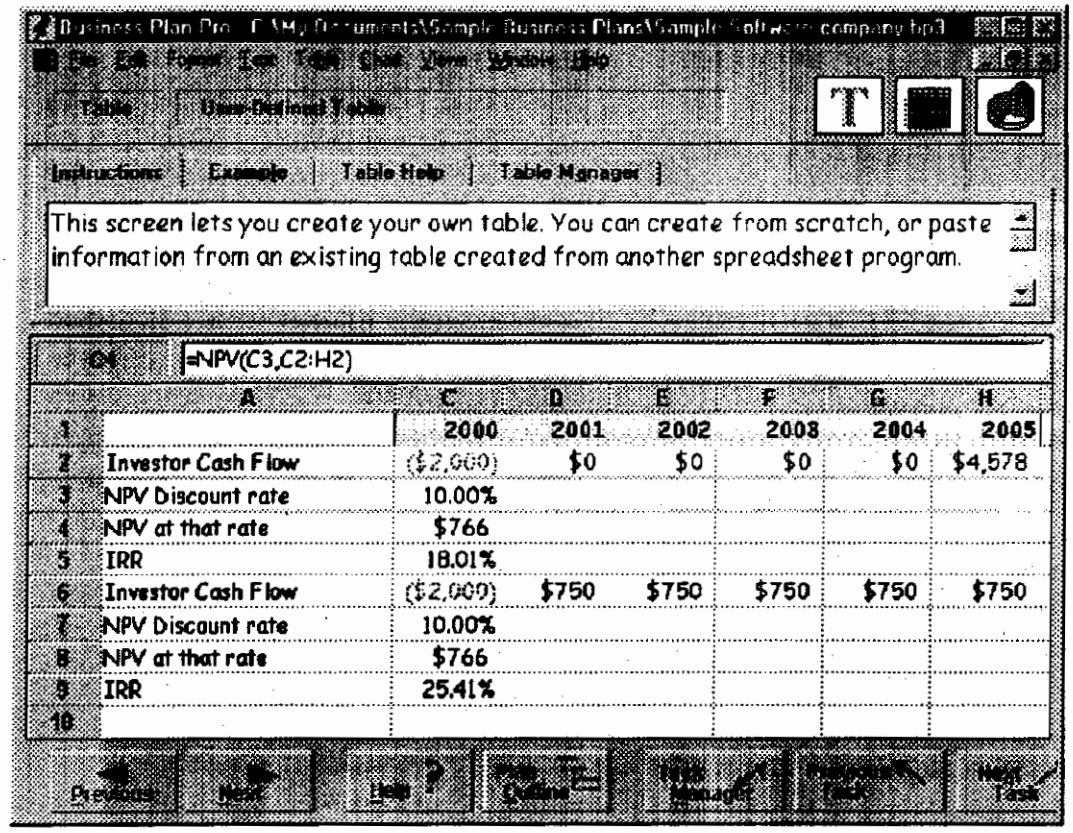
They both start with the concept of the time value of money. What would you choose if you could have $95 today or $100 a year from today? What if you could have $10 today or $100 a year from now? Most people would take the $95 today in the first instance, and the $100 a year from now in the second. This would be regardless of inflation. It illustrates the time value of money, meaning that money now is inherently more valuable than money later.

Net Present Value (NPV)

The Net Present Value (NPV) is a measure of the present value of future cash. To calculate NPV you discount future money at some assumed discount rate. In the following Illustration 21-1 you can see two sample investments, both with the same NPV, although very different cash flows. Both are discounted at 10% for calculating NPV.

In Illustration 21-2, the selected cell has an automatic function for calculating NPV based on defined discount rate and cash flows. Both of the investments have NPV of $766, even though one pays regular annual payments of $750, and the other pays nothing until a large payment at the end. Notice how the time value of money changes. The total payout of the first investment is more than that of the second, but because the

Illustration 21-1: Net Present Value Comparison



	A	C	D	E	F	G	H
1		2000	2001	2002	2003	2004	2005
2	Investor Cash Flow	($2,000)	$0	$0	$0	$0	$4,578
3	NPV Discount rate	10.00%					
4	NPV at that rate	$766					
5	IRR	18.01%					
6	Investor Cash Flow	($2,000)	$750	$750	$750	$750	$750
7	NPV Discount rate	10.00%					
8	NPV at that rate	$766					
9	IRR	25.41%					
10							

Calculated with *Business Plan Pro.*

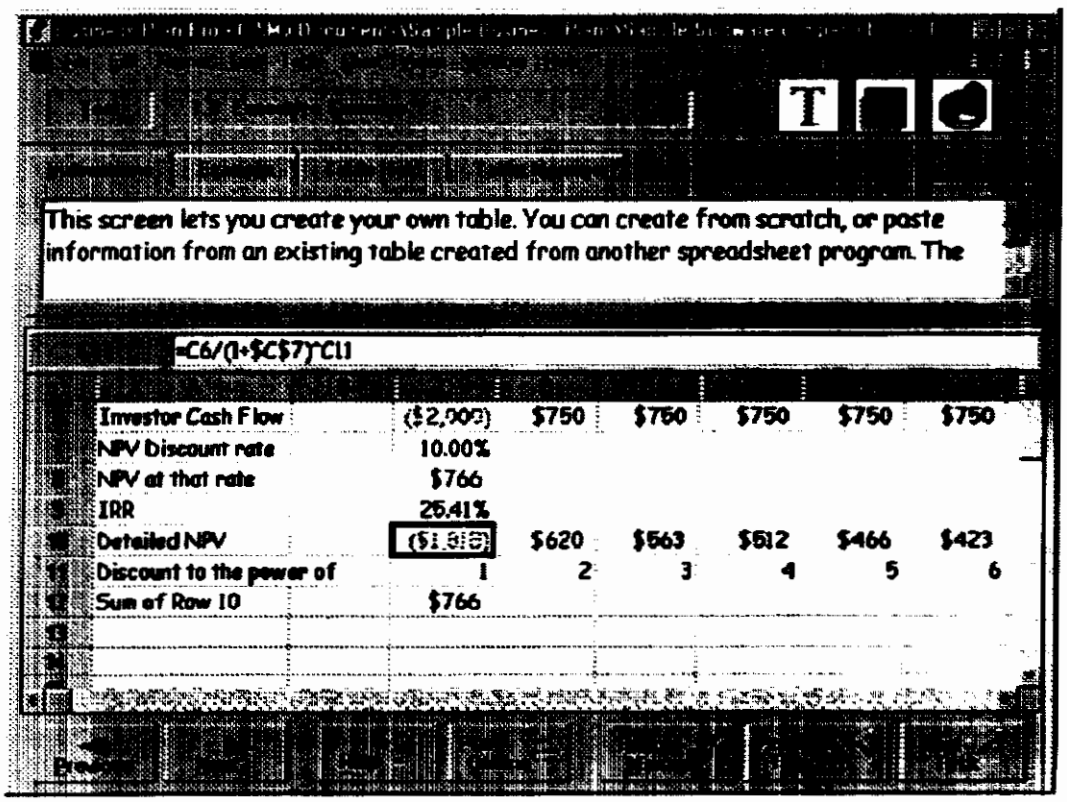
second's payout starts sooner, they both have equal NPV.

The NPVs in the illustrations were calculated using Business Plan Pro in its User-defined table, with the NPV function as shown in the formula. The cash flow for the first year is discounted by the discount rate as shown in the detailed formulas in the following Illustration 21-2.

The formula shown is copied to the right in the cells in row 10, and then the value in row 12 is the sum of the values in row 10. That's complicated, but then the NPV formula does that automatically.

Author's note: there's a good argument for not discounting the first value in the flow, which would change the results. I'd actually prefer that. However, the standard spreadsheet software NPV and IRR functions do

Illustration 21-2: Net Present Value Calculation



Calculated with *Business Plan Pro.*

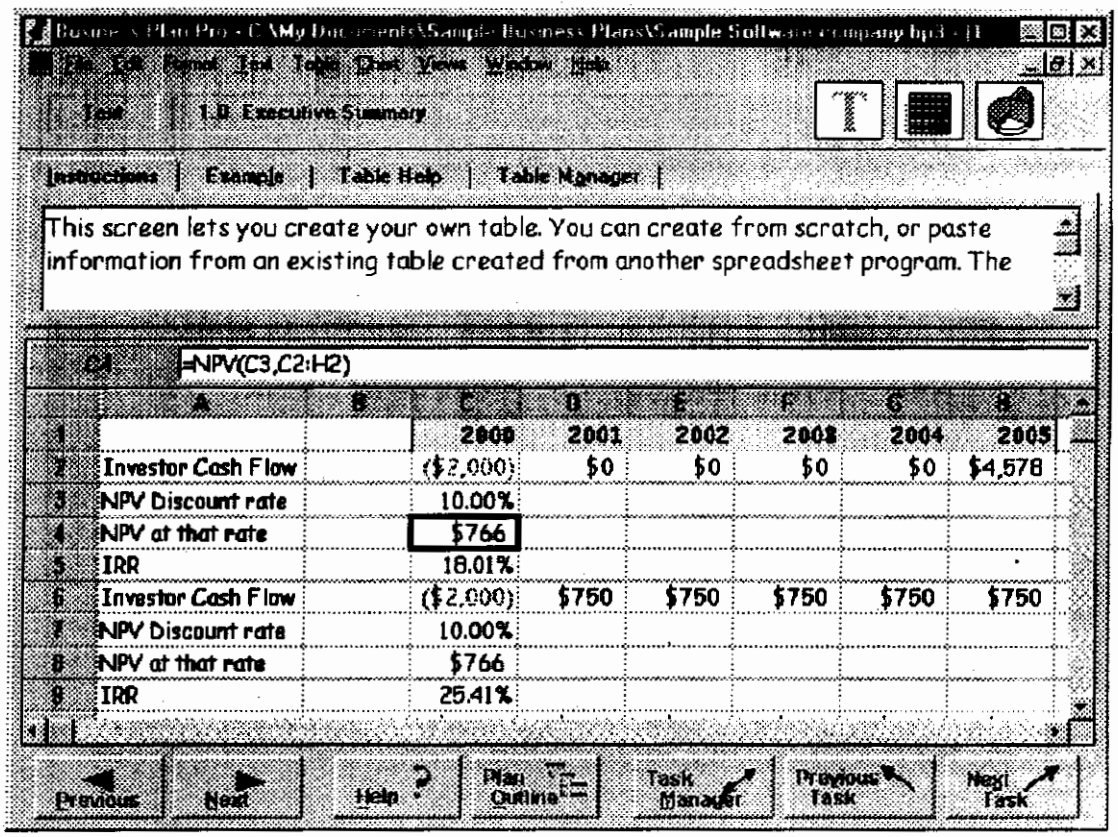
discount the first value as shown, so this is becoming a standard. It's hard to argue with a standard established by Microsoft Excel™.

For more background on how the discounting calculation can be done manually, you should consult a finance textbook or search the Web for the term "Net Present Value."

Internal Rate of Return (IRR)

The Internal Rate of Return (IRR) is based on the NPV calculation. It is the discount rate at which the NPV is zero. Notice in the following Illustration 21-3 how the selected cell's formula uses the built-in IRR function to calculate IRR for the first investment option.

Illustration 21-3: Internal Rate of Return Calculation



	A	B	C	D	E	F	G	H
1			2000	2001	2002	2003	2004	2005
2	Investor Cash Flow		($2,000)	$0	$0	$0	$0	$4,578
3	NPV Discount rate		10.00%					
4	NPV at that rate		$766					
5	IRR		18.01%					
6	Investor Cash Flow		($2,000)	$750	$750	$750	$750	$750
7	NPV Discount rate		10.00%					
8	NPV at that rate		$766					
9	IRR		25.41%					

Calculated with *Business Plan Pro.*

One important point with IRR is that the two investments show, although they have equal NPV, have very different IRRs. That's because the better one generates cash flow sooner.

Another important IRR point is that venture capitalists expect very high IRR on new investments. In recent years venture capital funds have generated overall IRRs of 50-100% or better, meaning that the winning deals have to generate IRRs of 200% or better. That's a very high return.

Small Business Financing Myths

- Venture capital financing is very rare. I'll explain more later, but assume that very few high-growth plans with high-power management teams are venture opportunities.
- Banks don't finance business start-ups. I'll have more on that later, too. Banks aren't supposed to invest depositors' money in new businesses.
- Business plans don't sell investors.

Where to Look for Money

In Chapter 2: Pick Your Plan, I said the plan matches the needs of the company. So does the process of looking for money. Where you look for money, and how you look for money, depends on your company and the kind of money you need. There is an enormous difference, for example, between a high-growth Internet-related company looking for second-round venture funding and a local retail store looking to finance a branch store. In the following sections of this chapter, I want to talk more specifically about the types of investment and lending available.

Venture Capital

The business of venture capital is frequently misunderstood. Many start-up companies resent venture capital companies for failing to invest in new ventures or risky ventures. People talk about venture capitalists as sharks—because of their supposedly predatory business practices—or sheep—because they supposedly think like a flock, all wanting the same kinds of deals.

This is not the case. The venture capital business is a business, and the people we call venture capitalists are business people who are charged with investing other people's money. They have a professional responsibility to reduce risk as much as possible. They

481

should not take more risk than is absolutely necessary to produce the risk/return ratios that the sources of their capital ask of them.

Venture capital shouldn't be thought of as a source of funding for any but a very few exceptional start-up businesses. Venture capital can't afford to invest in start-ups unless there is a rare combination of product opportunity, market opportunity, and proven management. A venture capital investment has to have a reasonable chance of producing a tenfold increase in business value within three years. It needs to focus on newer products and markets that can reasonably project increasing sales by huge multiples over a short period of time. It needs to work with proven managers who have dealt with successful start-ups in the past.

If you are a potential venture capital investment, you probably know it already. You have management team members who have been through that already. You can convince yourself and a room full of intelligent people that your company can grow ten times over in three years.

If you have to ask whether your new company is a possible venture capital opportunity, it probably isn't. People in new growth industries, multimedia communications, biotechnology, or the far reaches of high-technology products, generally know about venture capital and venture capital opportunities.

If you are looking for names and addresses of venture capitalists, you can look for links on the Palo Alto Software websites:

www.paloalto.com

www.bplans.com

These are updated regularly and are likely to have more specific information.

Otherwise, start with the Internet, with the net search engines I discussed in Chapter 8: The Business You're In and Chapter 9: Know Your Market. For example, you'll get at least 50 venture capital firms when you search **www.yahoo.com** for "venture capital."

The names and addresses of venture capitalists are also available in a couple of annual directories:

The Western Association of Venture Capitalists publishes an annual directory. This organization includes most of the California venture capitalists based in Menlo Park, CA, which is the headquarters of an amazing percentage of the nation's venture capital companies.

Pratt's Guide to Venture Capital Sources is an annual directory available for $225 (at the time of this printing; prices may change) plus shipping. Contact Venture Economics, 40 W. 57th St., 11th Floor, New York, NY 10019 (212) 765-5311.

182

"Sort-of" Venture Capital: Angels and Others

Venture capital is not the only source of investment for start-up businesses or small businesses. Many companies are financed by smaller investors in what is called "private placement." For example, in some areas there are groups of potential investors who meet occasionally to hear proposals. There are also wealthy individuals who occasionally invest in new companies. In the lore of business start-ups, groups of investors are often referred to as "doctors and dentists," and individual investors are often called "angels." Many entrepreneurs turn to friends and family for investment.

Your next question of course is how to find the "doctors, dentists, and angels" that might want to invest in your business. The discussion in Chapter 8: The Business You're In includes some government agencies, business development centers, business incubators, and similar organizations that will be tied into the investment communities in your area. Turn first to the local Small Business Development Center (SBDC), which is most likely associated with your local community college, or the Small Business Administration (SBA) offices in your area. Names and website addresses are also in Chapter 8.

You may want to try some secondary listing services and online sourcing businesses. I know the owners and operators of the *American Venture Capital Exchange*, and I know that they have been working to provide fair and respectful matching services between investors and companies needing investment. However, I haven't actually used the service. I've just dealt with the people (they have occasionally included literature in Palo Alto Software product boxes). They offer an online database of financing sources and a forum to list businesses seeking financing. Their website is:

www.avce.com

Phone number is 800-292-1993, fax number is (503) 221-9987; and email is avce@aol.com.

On my personal website, I have listed several consultants with whom I've had dealings, including people I worked with while consulting for Apple and other companies:

www.timberry.com

For legal reasons, I have to insist that my recommendation is at your risk, not mine, and I can't be responsible for third parties. I should also note that my recommendation has never and will never be sold for money or compensation of any kind, even in trade.

At your own risk, the following are some of the online services available through bulletin boards and similar sources. Deal with them carefully:

- Venture Capital Resource Library at **www.vfinance.com**
- Venture Capital Online at **www.vcapital.com**
- Business Funding Directory at **www.businessfinance.com**
- The Capital Network, 3925 W. Braker Lane, Austin, TX 78759, Telephone (512) 305-0826. **www.thecapitalnetwork.com**

Important: Be careful dealing with anyone who offers to help you find financing as a service for money. These are shark-infested waters. I am aware of some legitimate providers of business plan consulting, but legitimate providers are harder to find than the sharks.

Commercial Lenders

Banks are even less likely than venture capitalists to invest in, or loan money to, start-up businesses. They are, however, the most likely source of financing for most small businesses.

Start-up entrepreneurs and small business owners are too quick to criticize banks for failing to finance new businesses. Banks are not supposed to invest in businesses, and are strictly limited in this respect by federal banking laws. The government prevents banks from investment in businesses because society, in general, doesn't want banks taking savings from depositors and investing in risky business ventures; obviously when (and if) those business ventures fail, bank depositors' money is at risk. Would you want your bank to invest in new businesses (other than your own, of course)?

Furthermore, banks should not loan money to start-up companies either, for many of the same reasons. Federal regulators want banks to keep money safe, in very conservative loans backed by solid collateral. Start-up businesses are not safe enough for bank regulators and they don't have enough collateral.

Why then do we say that banks are the most likely source of small business financing? Because small business owners borrow from banks. A business that has been around for a few years generates enough stability and assets to serve as collateral. Banks commonly make loans to small businesses backed by the company's inventory or accounts receivable. Normally there are formulas that determine how much can be loaned, depending on how much is in inventory and in accounts receivable.

A great deal of small business financing is accomplished through bank loans based on the business owner's personal collateral, such as home ownership. Some would say that home equity is the greatest source of small business financing.

The Small Business Administration (SBA)

The SBA makes loans to small businesses and even to start-up businesses. SBA loans are almost always applied for and administered by local banks. You normally deal with a local bank throughout the process.

For start-up loans, the SBA will normally require that at least one third of the required capital be supplied by the new business owner. Furthermore, the rest of the amount must be guaranteed by reasonable business or personal assets.

The SBA works with "certified lenders," which are banks. It takes a certified lender as little as one week to get approval from the SBA. If your own bank isn't a certified lender, you should ask your banker to recommend a local bank that is. Chapter 8: The Business You're In lists the website and a toll-free telephone number to contact SBA.

Other Lenders

Aside from standard bank loans, an established small business can also turn to accounts receivable specialists to borrow against its accounts receivables.

The most common accounts receivable financing is used to support cash flow when working capital is hung up in accounts receivable. For example, if your business sells to distributors that take 60 days to pay, and the outstanding invoices waiting for payment (but not late) come to $100,000, your company can probably borrow more than $50,000. Interest rates and fees may be relatively high, but this is still often a good source of small business financing. In most cases, the lender doesn't take the risk of payment—if your customer doesn't pay you, you have to pay the money back anyhow. These lenders will often review your debtors, and choose to finance some or all of the invoices outstanding.

Another related business practice is called factoring. So-called factors actually purchase obligations, so if a customer owes you $100,000 you can sell the related paperwork to the factor for some percentage of the total amount. In this case, the factor takes the risk of payment, so discounts are obviously quite steep. Ask your banker for additional information about factoring.

485

Words of Warning

Don't take private placement, angels, friends and family as good sources of investment capital just because they are described here or taken seriously in some other source of information. Some investors are a good source of capital, and some aren't. These less established sources of investment should be handled with **extreme caution.**

Never, NEVER spend somebody else's money without first doing the legal work properly. Have the papers done by professionals, and make sure they're signed.

Never, NEVER spend money that has been promised but not delivered. Often companies get investment commitments and contract for expenses, and then the investment falls through.

Avoid turning to friends and family for investment. The worst possible time to not have the support of friends and family is when your business is in trouble. You risk losing friends, family, and your business at the same time.

Submitting a Plan

The information you submit to investors depends a great deal on what your objective is. Sometimes you'll submit a complete business plan, sometimes a Summary Memo. In most cases, even if you submit a short summary, you have to have the complete business plan ready to go as soon as the investors or lenders ask for it. If you're looking for lease financing, receivables, or a bank loan, you'll want to submit a loan support document to the lender.

When the search has provided you with a list of useful names, you can print your Summary Memo or loan support documents and send a copy to each of the investors, along with a brief cover letter.

Summary

Most businesses are financed by home equity or savings as they start. Only a few can attract outside investment. Venture capital deals are extremely rare. Borrowing will always depend on collateral and guarantees, not on business plans or ideas.

476

APPENDIX A:

GLOSSARY

A

Accounts payable	Bills to be paid as part of the normal course of business.
Accounts receivable	Debts owed to your company, usually from sales on credit.
Accumulated depreciation	Total accumulated depreciation reduces the formal accounting value (called book value) of assets. Each month's accumulated balance is the same as last month's balance plus this month's depreciation.
Acid test	Short-term assets minus accounts receivable and inventory, divided by short-term liabilities. This is a test of a company's ability to meet its immediate cash requirements.
Assets	Property that a business owns, including cash and receivables, inventory, etc. Assets are any possessions that have value in an exchange. The more formal definition is the entire property of a person, association, corporation, or estate applicable or subject to the payment of debts. What most people understand as business assets are cash and investments, accounts receivable, inventory, office equipment, plant and equipment, etc. Assets can be long-term or short-term, and the distinction between these two categories might be whether they last three years, five years, 10 years, or whatever; normally the accountants decide for each company and what's important is consistency. The government also has a say in defining assets, because it

	has to do with tax treatment; when you buy a piece of equipment, if you call that purchase an expense then you can deduct it from taxable income. If you call it an asset you can't deduct it, but you can list it on your financial statement among the assets. The tax code controls how businesses decide to categorize spending into assets or expenses.
Asset turnover	Sales divided by total assets. Important for comparison over time and to other companies of the same industry.

B

Break-even point	The unit sales volumes or actual sales amounts that a company needs to equal its running expense rate and not lose or make money in a given month. The formula for break-even point in units is: =Regular running costs/(Unit Price-Unit Variable Cost) The formula for break-even point in sales amount is: =Regular running costs/(1-(Unit Variable Cost/Unit Price))
Burden rate	Refers to personnel burden, the sum of employer costs over and above salaries (including employer taxes, benefits, etc.).

C

Capital assets	Long-term assets, also known as Plant and Equipment.
Capital expenditure	Spending on capital assets (also called plant and equipment, or fixed assets).
Capital input	New money being invested in the business. New capital will increase your cash, and will also increase the total amount of paid-in capital.

Cash	The bank balance, or checking account balance, or real cash in bills and coins.
Collection days	See Collection period, below.
Collection period (days)	The average number of days that pass between delivering an invoice and receiving the money. The formula is: =(Accounts_receivable_balance*360)/(Sales_on_credit*12)
Commissions	Gross margin multiplied by the commissions percentage.
Commissions percent	An assumed percentage used to calculate commissions expense as the product of this percentage multiplied by gross margin.
Cost of sales	The costs associated with producing the sales. In a standard manufacturing or distribution company, this is about the same as the cost of the goods sold. In a services company, this is more likely to be personnel costs for people delivering the service, or subcontracting costs.
Current assets	The same as short-term assets.
Current debt	Short-term debt, short-term liabilities.
Current liabilities	Short-term debt, short-term liabilities.

D

Debt and equity	The sum of liabilities and capital. This should always be equal to total assets.
Depreciation	An accounting and tax concept used to estimate the loss of value of assets over time. For example, cars depreciate with use.

Directory	A computer term related to the operating system on IBM and compatible computers. Disk storage space is divided into directories.
Dividends	Money distributed to the owners of a business as profits.
E	
Earnings	Also called income or profits, earnings are the famous "bottom line": sales less costs of sales and expenses.
EBIT	Earnings before interest and taxes.
Equity	Business ownership; capital. Equity can be calculated as the difference between assets and liabilities.
Expense	Webster's calls it "a spending or consuming; disbursement, expenditure." What's important about expenses for the purpose of business accounting is that expenses are deductible against taxable income. Common expenses are rent, salaries, advertising, travel, etc. Questions arise because some businesses have trouble distinguishing between expenses and purchase of assets, especially with development expenses. When your business purchases office equipment, if you call that an expense then you can deduct that amount from taxable income, so it reduces taxes.
F	
Fiscal year	Standard accounting practice allows the accounting year to begin in any month. Fiscal years are numbered according to the year in which they end. For example, a fiscal year ending in February of 1992 is Fiscal 1992, even though most of the year takes place in 1991.

Fixed costs	Running costs that take time to wind down: usually rent, overhead, some salaries. Technically, fixed costs are those that the business would continue to pay even if it went bankrupt. In practice, fixed costs are usually considered the running costs.
G	
Gross margin	Sales minus cost of sales.
Gross margin percent	Gross margin divided by sales, displayed as a percentage. Acceptable levels depend on the nature of the business.
I	
Interest expense	Interest is paid on debts, and interest expense is deducted from profits as expenses. Interest expense is either long-term or short-term interest.
Inventory	Goods in stock, either finished goods or materials to be used to manufacture goods.
Inventory turnover	Total cost of sales divided by inventory. Usually calculated using the average inventory over an accounting period, not an ending-inventory value.
Inventory turns	Inventory turnover (above).
L	
Labor	The labor costs associated with making goods to be sold. This labor is part of the cost of sales, part of the manufacturing and assembly. The row heading refers to fulfillment costs as well, for service companies.
Liabilities	Debts; money that must be paid. Usually debt on terms of less than five years is called short-term liabilities, and debt for longer than five years in long-term liabilities.

Long term assets	Assets like plant and equipment that are depreciated over terms of more than five years, and are likely to last that long, too.
Long term interest rate	The interest rate charged on long-term debt.
Long term liabilities	This is the same as long-term loans. Most companies call a debt long-term when it is on terms of five years or more.

M

Materials	Included in the cost of sales. These are materials involved in the assembly or manufacture of goods for sale.

N

Net cash flow	This is the projected change in cash position, an increase or decrease in cash balance.
Net profit	The operating income less taxes and interest. The same as earnings, or net income.
Net worth	This is the same as assets minus liabilities, and the same as total equity.

O

Other short-term assets	These might be securities, business equipment, etc.
Other ST liabilities	These are short-term debts that don't cause interest expenses. For example, they might be loans from founders or accrued taxes (taxes owed, already incurred, but not yet paid).

P

Paid-in capital	Real money paid into the company as investments. This is not to be confused with par value of stock, or market value of stock. This is actual money paid into the company as equity investments by owners.
Payment days	The average number of days that pass between receiving an invoice and paying it. It is not a simple estimate; it is calculated with a financial formula: =(Accounts_payable_balance*360)/(Total entries to accounts payable*12)
Payroll burden	Payroll burden includes payroll taxes and benefits. It is calculated using a percentage assumption that is applied to payroll. For example, if payroll is $1,000 and the burden rate is 10 percent, the burden is an extra $100. Acceptable payroll burden rates vary by market, by industry, and by company.
Personnel burden	Payroll burden. See above description.
Plant and equipment	This is the same as long-term, fixed, or capital assets.
Product development	Expenses incurred in development of new products (salaries, laboratory equipment, test equipment, prototypes, research and development, etc.).
Profit before int and taxes	This is also called EBIT, for Earnings Before Interest and Taxes. It is gross margin minus operating expenses.

R

Receivables turnover	Sales on credit for an accounting period divided by the average accounts receivables balance.
Retained earnings	Earnings (or losses) that have been reinvested into the company, not paid out as dividends to the owners. When retained earnings are negative, the company has accumulated losses.

Return on assets	Net profits divided by total assets. A measure of profitability.
Return on investment	Net profits divided by net worth or total equity; yet another measure of profitability. Also called ROI.
Return on sales	Net profits divided by sales; another measure of profitability.
ROI	Return on investment; net profits divided by net worth or total equity, another measure of profitability.

S

Sales break-even	The sales volume at which costs are exactly equal to sales. The exact formula is: =Fixed_costs/(1-(Unit_Variable_Cost/Unit_Price))
Sales on credit	Sales made on account; shipments against invoices to be paid later.
Short term	Normally used to distinguish between short-term and long-term, when referring to assets or liabilities. Definitions vary because different companies and accountants handle this in different ways. Accounts payable is always a short-term liability, and cash, accounts receivable and inventory are always short-term assets. Most companies call any debt of less than five-year terms short-term debt. Assets that depreciate over more than five years (e.g., plant and equipment) are usually long-term assets.
Short term assets	Cash, securities, bank accounts, accounts receivable, inventory, business equipment, assets that last less than five years or are depreciated over terms of less than five years.
Short term notes	These are the same as short-term loans. These are debts with terms of five years or less.

Starting date	The starting date for the entire business plan.
T	
Tax rate percent	An assumed percentage applied against pre-tax income to determine taxes.
Taxes incurred	Taxes owed but not yet paid.
U	
Unit variable cost	The specific labor and materials associated with a single unit of goods sold. Does not include general overhead.
Units break-even	The unit sales volume at which the fixed and variable costs are exactly equal to sales. The formula is: UBE=Fixed_costs/(Unit_Price-Unit_Variable_Cost)

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APPENDIX B:

INDEX

A

Accounts Payable
  Defined 133
  Example 114
Accounts Payable Turnover
  Ratios 139
Accounts Receivable
  Defined 132
  Example 113
Accounts Receivable Turnover
  Ratios 138
Acid Test, Ratios 140
Activity Ratios 138
Adjusting, Sales Plan 159
Analysis, Variance 164
Asset Turnover, Ratios 140
Assets
  Start-up 47
Assets to Sales
  Ratios 140
Average per-unit Cost
  Break-even Analysis 18
Average per-unit Sales
  Break-even Analysis 17

B

Balance Sheet
  Defined 135
  Link to Cash Flow 132
  Table 136
Banks 178
Baseline Numbers
  Ongoing Companies 44
  Start-up Companies 46
Bottom Line 121
Break-even Analysis
  Average per-unit Cost 18
  Average per-unit Cost/sales 17
  Average per-unit Sales 17
  Chart 18
  Defined 140
  Monthly Fixed costs 18
Business Funding Directory 178
Business Numbers 111
  Link between 120
Business Plan
  Internet 69
  Standard 10
Business Publications 72
Business Ratios 137
Business Type 65

C

Cash Balance
  Calculate 131
  Example 116
Cash Flow
  Example 116
  Table 128
Cash Planning, example 125

Cash, Sources 128
Cash vs. Profits 112
Census Bureau, U.S. 74
Collection Days
  Example 117
  Ratios 138
Commercial Lenders
  Banks 178
Competition 67
Competitive Comparison 52
Competitive Edge 44
Consultants 75
Current Debt/Total Assets
  Ratios 140
Current Ratio, Liquidity 139

D

Debt Ratios 139
Debt to Net Worth, Ratios 139
Debt/Assets, Ratios 140
Distribution Patterns 66
Dividend Payout, Ratios 140

E

Earnings, Retained 134
Executive Summary 153
Expenses 121
  Start-up 46

F

Final Edit, Print 170
Finance
  Myths 175
  Small Business Administration
    (SBA) 179
Financial Analysis
  About Business Numbers 111
  Cash is King 125
  Finish the Financials 135
  The Bottom Line 121
Follow Up, Implementation 156
Following Up
  Getting Financed 171
  Print and Publish 169
Forecasting
  Expense Budget 101
  Forecast your Sales 89
  Market 95
Forecasting Tools, graphics 92
Fundamentals
  Mini-Plan 15
  Pick Your Plan 9
  Starting a Business 21
Funding, Start-up 49
Future Products 54

G

Gathering Information
  Know Your Market 79
  The Business You're In 65
General and Administrative
    expenses 124
Gross Margin-Ratios 138

H

Home Office, personnel 60

I

Implementation
  Follow Up 156
  Milestones 151
  Plan for 155

448

Income Statement 121
  Detailed 122
  Simple 122
Industry Analysis 65
Industry Participants 66
Interest Coverage
  Ratios 139
Internal Rate of Return (IRR) 174
Internet
  Business Plan 69
  Market Research 68
Inventory Turnover
  Example 118
  Ratios 138
Investor Summary 14

K

Keys to Success 17

L

Legal Entity/Ownership 42
Libraries
  Reference 73
Link
  Business Numbers 120
  Cash Flow-Balance Sheet 132
Liquidity Ratios 139
Loan Application
  Example 14
  Summary 170
Locations and Facilities 43
Long-term Liabilities 133
Long-Term Plan 153
Loss at Start-up 49

M

Management Team 57
  Background 59
  Gaps 59
Market
  Value-Based 146
Market Analysis 19
  Chart 97
  Table 19, 97
Market Needs 99
Market Research 79
  Internet 68
  Psychographics 83
  Values and Lifestyles (VAL) 83
Market Segmentation 95
Market Trends 99
Milestones Table 151
Mission Statement 16

N

Net Present Value (NPV) 172
Net Profit Margin
  Ratios 138
Net Working Capital
  Ratios 139

O

Objectives
  Mini-Plan 15
Organizational Structure 59

499

P

Payroll burden
  Personnel 61
Personnel
  Detailed 61
  Home Office 60
  Simple 60
Plan for Implementation 155
Plan-vs.-Actual
  Milestones 151
Positioning Tactics
  Market Strategy 148
Presentation
  Print Plan 170
Pricing Tactics
  Market Strategy 148
Print Plan 169
  Final Edit 170
Pro Forma Income 121
Pro Forma Profit and Loss 121
Product Sourcing 53
Profit and Loss
  Actual numbers 162
  Detailed 122
  Planned numbers 161
  Simple 122
  Statement 121
  Variance 163
Profitability Ratios 138
Programs
  Strategy Pyramid 146
Promotion Tactics
  Market Stategy 149
Psychographics
  Market Research 83
Pyramid, Strategy 146

Q

Quick Ratio, Liquidity 139

R

Ratios 137
  Accounts Payable Turnover 139
  Acid Test 140
  Activity 138
  AR Turnover 138
  Asset Turnover 140
  Assets to Sales 140
  Collection Days 138
  Current Debt/Total Assets 140
  Debt 139
  Debt to Net Worth 139
  Debt/Assets 140
  Dividend Payout 140
  Gross Margin 138
  Inventory Turnover 138
  Liquidity 139
  Net Profit Margin 138
  Profitability 138
  Return on Assets 138
  Return on Equity 138
  Sales/Net Worth 140
  Short-term Liabilities (Debt) to Liabilities 139
  Total Assets Turnover 139
Reference Libraries 73
Retained Earnings, defined 134
Return on Assets, Ratios 138
Return on Equity, Ratios 138
RMA Associates 70
ROI
  Return on Investment 138

500

S

Sales
  Actual 158
  Adjusted 159
  Net Worth, Ratios 140
  Plan 157
  Programs 94
  Strategy 93, 149
  Variance 158
Sales and Marketing
  Expenses 124
Sales Forecast
  by Units 91
  Chart 92
Sales Literature 55
SBA
  Small Business Administration 73
SBDC
  Small Business Development
    Centers 74
SCORE
  Service Corps of Retired
    Executives 74
Search Engines
  Internet 70
Segmentation, Market 95
Short-term Debt to Liabilities
  Ratios 139
Small Business Administration
    (SBA) 73
  Financing 179
  Internet 69
Small Business Development Centers
  SBDC 74
Sources of Cash
  Cash Flow 128
Stanford Research Institute 83
Start-up Plan 10
Start-up Requirements 48
Starting Sales Plan 157
State Development Agencies 76
Strategy and Tactics
  Make it Real 151
  Plan for Implementation 155
  Strategy is Focus 145
Strategy Pyramid 146
Summary, Executive 153
Summary Memo 152
Summary Paragraph 42, 51, 152

T

Tactics, Strategy Pyramid 146, 272
Technology 53
Tell Your Story
  Describe your Company 41
  Management Team 57
  What you Sell 51
Texas Capital Network
  Venture Capital 178
Standard Outline 10
Time Value of Money 171
Timeframes 14
Total Assets Turnover
  Ratios 139
Trade Associations 71, 76
Type of business 65

U

Uses of Cash, example 129

501

V

Value Proposition 44, 146
Value-based Marketing 146
Variance Analysis 164
Venture Capital 175
  Angels 177
  Doctors and Dentists 177
  Online 178
  Resource Library 178

W

Working Capital, example 115
World Wide Web (WWW)
  Search Engines 70
    Excite.com 84
    Yahoo.com 84
  www.avce.com 177
  www.bplans.com 69
  www.businessfinance.com 178
  www.census.gov 74
  www.miniplan.com 10
  www.paloalto.com 69
  www.rmahq.org 71
  www.sba.gov 69
  www.score.org 74
  www.timberry.com 177
  www.vfinance.com 178
  www.yahoo.com 84

Y

Yahoo.com
  Business Information 70

502