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# 1 Business, Financial Statements & Financial Planning

## Introduction

Ever since the dawn of mankind, trade has been an inseparable feature of human activity. Trade is the process by which goods and services are exchanged for something else of value. Even cavemen must have engaged in trade activities, changing a fur pelt for a spear or some other valuable object. Simple as their economy may appear by today's standards, these early humans would not have survived without ever trading within their group or with other wandering tribes. No single person can ever acquire everything he or she needs to survive by him or herself. Trading is therefore the key to getting the necessities of life. In the primitive societies of yesteryear, most of the goods and services were produced within the tribal group or family. Today most production takes place in specialized organizations that trade their products with other organizations or consumers. Such organizations are the businesses or enterprises in today's economy. In this chapter the basic characteristics of running a business are discussed. When running a business, it is vital to be able to assess how the business is doing. In this chapter we will have a look at how the financial results are measured and reported via the three main financial statements, being the income statement, the cash flow statement and the balance sheet.
Understanding these financial statements is of key importance to understanding anything related to accounting and finance. After having studied this chapter you will be able to understand and compose the principle financial statements following basic business transactions. Also you will learn what role these statements play in the planning process of a business.

## 1.1 Running a Business

In this text, a business is considered to be an organization that produces and sells goods or services in order to generate income for its owners. To be able

to produce and sell something, the business needs specific production means or resources. For instance, to run a restaurant you need a location, kitchen equipment, dishes and silverware and ingredients for preparing meals. The business does not necessarily have to own all the resources it uses. The business may choose to lease or rent certain resources instead of owning them. Instead of owning the building in which the restaurant is located, the restaurant proprietor may decide to rent a building. Apart from the physical resources mentioned above the restaurant also needs certain services to run the place. We can think of the man-hours of the staff it employs, the services of an advertising agency or those of professional cleaners. All the goods and services a business needs to run its operations are considered to be production means.

We said the business intends to generate an income for its owners. The initiative to start a business comes from an entrepreneur. The entrepreneur is typically the first owner of the business.
The income the owners derive from the business is the profit that it generates. Profit is the difference between the revenue and expenses of the business. In other words, there will only be a profit if there's 'something' left after having compensated the employees, the suppliers and everybody else that has made a contribution to the business. We will discuss this in more detail in the next section.
Of course it is not at all certain whether a business will return a profit or not. Even if the restaurant in our example fails to attract customers, the rent and other bills must still be paid. Instead of generating profit for the owner, there may be a loss. A loss will occur when the expenses are greater than the revenue. One of the key characteristics of running a business is exposure to risk. There is risk because there is uncertainty regarding the outcome of the business operation. A lot of factors influence the success of a business operation, many of them are beyond the control of the entrepreneur. The success of a business running a hotel in a ski-resort will depend not only on cleanliness of rooms and friendliness of staff but also on the amount of snow that falls during the winter. The owner of such a business must accept the risk of losing money because of unfavorable weather conditions.

Many different parties besides the owners are involved in the affairs of a business. These so-called stakeholders may have conflicting interests but in the end they all benefit from a healthy business. So even though low wages for the workforce may result in a higher (short-term) profit for the owners,

the business can ill afford to underpay or maltreat its employees or it risks losing them or at least their enthusiasm and commitment. In this text we assume that the final criterion when making business decisions is the wealth of the owners. We have to understand however that this does not mean that we can ignore or violate the legitimate interests of other stakeholders.

## 1.2 Financial Statements

Businesses use several reporting tools to communicate the financial facts of their operations. These financial reports or statements are composed for both internal and external information needs. This section provides a basic introduction to financial statements.

### *The Balance Sheet*

A balance sheet is a document that shows the financial situation of a business at a particular moment. It consists of two lists. The first list shows the resources that the business actually owns at a certain moment. These resources are called assets. The list shows the assets and their value. Leased or rented resources are usually not shown here. For instance, a newly opened shop has come up with the following list as of January 1.

*Table 1.1 List of Assets*

| | |
|---|---|
| Building | $150,000 |
| Fixtures | $50,000 |
| Inventory | $25,000 |
| Cash | $5,000 |
| **Total assets** | **$230,000** |

Two main categories of assets can be identified. These are the current assets and fixed assets or non-current assets. Fixed assets are those assets that can be used more than once. The building in which the shop is located can be used today to serve customers but hopefully tomorrow and next year as well. The same applies to the fixtures, which may include such items as cash registers, counters and shopping carts.
On the other hand, current assets such as inventories and cash can only be used once. An item in inventory can only be sold once. If he would like to repeat the sale, the shop-owner must take another item out of inventory.

It is not possible to classify assets as fixed or current simply based on general or technical characteristics. The distinction depends on context. A computer is a fixed asset when it's used in an office. A computer is a current asset when it is part of the inventory of a computer wholesaler.

Our retail business has invested $230,000 in various assets. This means the money necessary to finance these assets must have come from somewhere. The second list of the balance sheet shows how the assets are financed. In other words it shows where the money came from. It shows the financial sources. Basically there are two types of financial sources. First, the owner or owners will have to provide a certain amount of the sources. This is called equity. Second, the business can raise money through loans. This is called debt or liabilities. If the shop-owner can only invest $130,000 himself, he must borrow the rest to be able to finance the business. Banks can provide loans of course, but other institutions or persons can also lend money. The list of sources is as follows:

*Table 1.2 List of Sources*

| | |
|---|---|
| Equity | $130,000 |
| Debt | $100,000 |
| **Total sources** | **$230,000** |

The balance sheet is a combination of the two lists.

*Table 1.3 Balance Sheet January 1 ($)*

| Assets | | Sources | |
|---|---|---|---|
| Building | 150,000 | Equity | 130,000 |
| Fixtures | 50,000 | Debt | 100,000 |
| Inventory | 25,000 | | |
| Cash | 5,000 | | |
| **Total assets** | **230,000** | **Total sources** | **230,000** |

The balance sheet provides a static picture of a business. When a transaction takes place, the balance sheet changes since the value and/or composition of assets and sources will change. Businesses do not prepare a new balance sheet after each and every transaction since this would be too time consum-

ing. Rather, balance sheets are prepared at certain time intervals, such as once a month or once every quarter.
The balance sheet by its very nature, is always in equilibrium. If a business wants to acquire new assets, it must attract funds sufficient to buy the asset. If the business has sufficient cash to buy an asset, the amount of cash will decrease but at the same time it will be substituted by another asset. At all times, total assets must be equal to total sources.

### *The Income Statement*

An income statement shows the revenue and expenses of a certain period. The difference between the revenue and expenses is the income or profit for that period. The basic format is as follows:

*Table 1.4 Income Statement for the Year 201X ($)*

| | |
|---|---|
| Revenue | 500,000 |
| Expenses | (450,000) |
| **Profit** | **50,000** |

The chief objective of the income statement is to show the income or profit that the business generates for its owners. Income statements can be composed for any length of period. So it is possible to make a daily income statement, but this would be very time consuming. Businesses therefore prepare income statements on a monthly or quarterly basis. Looking at the income statement we see that profit is defined as follows:

*Profit = Revenue – Expenses*

Simple as this definition may seem, the terms revenue and expenses frequently are misunderstood. Revenue is defined as follows:

*Revenue = Monetary Value of Goods and Services Sold*

This definition implies that revenue can occur without an actual payment being made by the customer at that moment. *Sold* is the key word in this definition. If a car dealer sells a new sedan for $40,000 in March and agrees with the customer that the amount will be paid in June, the dealer will report revenue on the income statement in March. The moment of actual payment is not relevant for the income statement. A sales transaction has

occurred. A product was sold and delivered. This means that on the income statement, the term revenue does not have the same meaning as money received. This seems odd to many people who think of revenue as money received. It contradicts the everyday notion of what revenue is. Of course all revenue must be received in money at some point in time. This just doesn't necessarily happen in the same period in which the sale was made.

A similar contradiction with everyday views arises when we define the meaning of expenses:

*Expenses = Monetary Value of Production Means Consumed*

More formally we could say that the expenses are equal to the value of the resources that have been sacrificed in the course of business. This definition implies that expenses can occur without an actual (money) payment at the same time. A business can purchase materials in April, use them in May and pay for them in June. The cost of these materials will be reported in May, the period during which they were used. Of course, all the goods and services that the company uses will have to be paid for at some point in time. It just doesn't necessarily have to be in the same period during which they are used. The actual payment may occur before, in or after the period they are used. This means that the expense of a certain period is not the same thing as the payments being made in that period. This also contradicts what many people would intuitively think.

### *The Cash Flow Statement*

The cash flow statement also shows two things. It shows all payments and receipts (in cash or through the bank) of a certain period. In other words, it shows the cash movements. The difference between payments and receipts results in a change in the cash and bank holdings. Just like the income statement, the cash flow statement can be composed for any length of period desired. The basic format is as follows:

*Table 1.5 Cash Flow Statement for the Year 201X ($)*

| | |
|---|---|
| Receipts | 480,000 |
| Payments | (460,000) |
| **Net cash flow** | **20,000** |

In order to get a good understanding of financial statements, we will look into the activities of a small business where we will see how these statements are composed and how they are linked.

## 1.3 Recording Business Transactions

In this section the consequences of transactions for the financial statements are discussed. A simple business is used as an example.

### *Example 1.1 Mr. Gill's Business*

Mr. Gill starts a simple business on January 1. He invests $25,000 of his own money in the business and holds this in cash initially. This will result in the following balance sheet:

*Balance Sheet 1 ($)*

| Assets | | Sources | |
|---|---|---|---|
| Cash | 25,000 | Equity | 25,000 |

His business will trade in olive oil. The purchase price for one bottle is $5 and the sales price is $8. Furthermore, he will rent a warehouse for $2,000 a month.
During January the following transactions take place:
1 Gill buys 5,000 bottles and pays in cash.
2 A client buys 2,000 bottles and pays in cash.
3 Gill buys 3,500 bottles and agrees with his supplier to pay in February.
4 Another client buys 2,000 bottles but will pay in February.
5 Gill pays the monthly rent.

Each transaction will be analyzed to establish its influence on the balance sheet.

*Transaction 1*
When Gill buys the bottles, he is making an investment. Since he pays for it in cash, cash goes down. A new asset will substitute cash. This new asset is the inventory of products. The changes are:

| | |
|---|---|
| Cash | - $25,000 |
| Inventory | + $25,000 |

The balance sheet now is as follows:

*Balance Sheet 2 ($)*

| Assets | | Sources | |
|---|---|---|---|
| Inventory | 25,000 | Equity | 25,000 |

*Transaction 2*
When the client buys 2,000 bottles for $8 each and pays cash, Mr. Gill must receive $16,000. At the same time his inventory will go down by 2,000 bottles. Yet this will only be for an amount of $10,000 since he bought the bottles himself for only $5. If these were the only changes, the balance sheet would no longer be in equilibrium. As we know, this cannot be right. With this sales transaction Gill made a profit of $6,000 (= 2,000*$3). This profit increases his wealth and in turn increases equity. The changes are:

| | |
|---|---|
| Cash | + $16,000 |
| Inventory | - $10,000 |
| Equity | + $6,000 |

The balance sheet will now look as follows:

*Balance Sheet 3 ($)*

| Assets | | Sources | |
|---|---|---|---|
| Inventory | 15,000 | Equity | 31,000 |
| Cash | 16,000 | | |
| **Total assets** | **31,000** | **Total sources** | **31,000** |

*Transaction 3*
After buying 3,500 bottles for $5 each, the inventory must increase by $17,500. However, no cash payment has yet taken place. Gill is buying the goods on credit. In this case he gets one month credit, meaning he can delay payment for the goods by one month. The result of this transaction is

that Gill now owes $17,500 to his supplier. This is a debt that is called a trade payable. The changes on the balance sheet are:

| | |
|---|---|
| Inventory | + $17,500 |
| Trade payable | + $17,500 |

The balance sheet will now look as follows:

*Balance Sheet 4 ($)*

| **Assets** | | **Sources** | |
|---|---|---|---|
| Inventory | 32,500 | Equity | 31,000 |
| Cash | 16,000 | Trade payables | 17,500 |
| **Total assets** | **48,500** | **Total sources** | **48,500** |

*Transaction 4*

After selling another 2,000 bottles, the inventory goes down again. The second sale, however, is on credit. The client is allowed to pay in February. Gill receives no cash yet for the products. Gill has a claim on the client for $16,000. This claim is an asset called receivables. Even though the client hasn't paid yet, Gill still made a profit. Equity therefore again increases. The changes on the balance sheet are:

| | |
|---|---|
| Inventory | - $10,000 |
| Receivables | + $16,000 |
| Equity | + $6,000 |

The balance sheet now looks as follows:

*Balance Sheet 5 ($)*

| **Assets** | | **Sources** | |
|---|---|---|---|
| Inventory | 22,500 | Equity | 37,000 |
| Receivables | 16,000 | Trade payables | 17,500 |
| Cash | 16,000 | | |
| **Total assets** | **54,500** | **Total sources** | **54,500** |

*Transaction 5*
When Gill pays the rent, cash goes down. He pays for a service he used. This means he pays for an expense that occurred in this month. This expense decreases Gill's wealth and consequently equity decreases. The changes on the balance sheet are:

Cash - $2,000
Equity - $2,000

The balance sheet will now look as follows:

*Balance Sheet 6 ($)*

| Assets | | Sources | |
|---|---|---|---|
| Inventory | 22,500 | Equity | 35,000 |
| Receivables | 16,000 | Trade payables | 17,500 |
| Cash | 14,000 | | |
| **Total assets** | **52,500** | **Total sources** | **52,500** |

Balance sheet six is the one ending January. As stated earlier, it is very impractical for a real business to make a new balance sheet after every transaction. We have only done so here to illustrate the effects transactions have on the balance sheet. Moreover, a balance sheet doesn't show us what happened during a period. It only shows the financial situation at a particular moment. Should we want to get an overview of what happened in the business during January, we have to compose the other financial statements, being the income and the cash flow statements.

The income statement would show the following:

*January Income Statement ($)*

| | | | |
|---|---|---|---|
| Sales revenue | 4,000*$8 | = | 32,000 |
| Costs of sales | 4,000*$5 | = | (20,000) |
| Rent | | | (2,000) |
| **Profit** | | | **10,000** |

The sales revenue for January is $32,000. The number of units sold was 4,000. As stated earlier, the time of the actual payment by the customer has no influence on the income statement since we record revenue at the moment of sale.
The cost of sales is based on 4,000 units. These were sold and delivered to the customer. The number of units purchased (8,500) by Gill is *not* shown in any way on the income statement.
Renting a place is an example of using a service, so it clearly is an expense. The monthly price tag is $2,000 in this case.
The total profit thus comes to $10,000. This amount exactly matches the total increase of equity that we see when comparing balance sheets 1 and 6. It is therefore correct to conclude that the income statement shows the transactions that have an effect on equity.

The final statement to compose is the cash flow statement. The cash flow statement basically is a summary of all transactions that involve a cash movement, either in or out.

*January Cash Flow Statement ($)*

| | |
|---|---|
| Receipts | 16,000 |
| Purchase | (25,000) |
| Rent | (2,000) |
| **Change in cash** | **(11,000)** |

Gill receives $16,000, half of this month's revenue. Gill made two payments: he paid $25,000 for the first 5,000 bottles he bought and he paid the rent of $2,000. The result is that cash goes down by $11,000. This corresponds with the decline from $25,000 to $14,000 we see when comparing the first and final balance sheet.

Based on the example we can see that the income and cash flow statements show us the financial activities that took place during a period. The balance sheet on the other hand doesn't show the activities but rather the outcome of those activities. The balance sheet captures a moment like a photo. The income and cash flow statements capture a period, as does a film.

### *Cost of Fixed Assets*

In the example of Mr. Gill, the only assets the business employed were current assets (inventory, receivables and cash). Most businesses will also own fixed assets such as a computer or a car. A fixed asset is used over a longer period of time. This period of time is the so-called useful life of an asset. After this useful life the asset may still have some value. This is the scrap value or salvage value.
Think of a taxi business that uses its cars for four years and then sells them off. It is not correct to record the purchase price as an expense on the income statement in the period that the car is bought. The car will be used for four years, so it would be fair to divide the purchase price minus the scrap value as an expense over four years. This is done by a periodic depreciation on the car.

### *Example 1.2 Depreciation on a Car*

A taxi business buys a new car for $30,000. They intend to use it for four years. At the end of the four years the car will have a scrap value of $4,000. When the car is bought and paid for, no expenses are recorded on the income statement. On the balance sheet we see a change from cash into car. The annual cost of using the car is ($30,000 – $4,000)/4 = $6,500.
Over the four years the value of the car declines by $26,000. This is the total cost (besides fuel, maintenance etc.) of using the car. Since the car will be used for four years the annual cost is $6,500.
Each year, the income statement will show a depreciation expense of $6,500. You could say that each year the business uses $6,500 of the car's value. Each year, the book value of the car on the balance sheet will decrease by $6,500.

The investment in the car results in a cash outflow since it must be paid. After that we see periodic depreciation expenses on the income statement. The depreciation expense does *not* show up as a payment on the cash flow statement. A depreciation expense *never* results in a payment. If this is hard to imagine, ask yourself this: do you have to pay somebody when your own car has a lower value than last year simply because it has aged one more year? The answer is a simple no.

## 1.4 Profit & Equity

Profit equals revenue minus expenses we saw earlier. Profit is also known as residual income. It is the income that is left after all expenses are covered. Since profit is the owner's income he can decide what to do with it. It can be left in the business or taken out for personal use. If this income is not used for personal purposes but left in the business, equity increases. The owner reinvests his income in the business.

Equity can therefore increase for two reasons:
- direct investment by the owner(s);
- keeping (reinvesting) profit in the business.

As mentioned before, profit can also be negative. In other words a loss could also occur. In that case we would see a decrease of equity.

Equity can decrease for two reasons:
- direct withdrawal by the owner(s);
- negative profit (loss).

***Example 1.3 Withdrawal & Loss***

*Balance Sheet April 1 ($)*

| **Assets** | | **Sources** | |
|---|---|---|---|
| Inventory | 10,000 | Equity | 13,000 |
| Receivables | 5,000 | Trade payable | 4,000 |
| Cash | 2,000 | | |
| **Total assets** | **17,000** | **Total sources** | **17,000** |

Suppose the owner takes $1,000 out of his business for personal use. Both equity and cash would go down by $1,000, so they would be $12,000 and $1,000 respectively. Total assets now are $16,000.
Suppose next that the inventory is stolen and that the business has no insurance against theft. The inventory would have a value of zero and therefore total assets would go down by $10,000 to $6,000. Naturally the suppliers are not to blame. They still are entitled to their claims of $4,000. Equity

therefore must become: $6,000 – $4,000 = $2,000, being total assets minus total debts.
Also correct would be: $13,000 – $1,000 – $10,000= $2,000. This is equal to the original amount of equity minus the withdrawal and minus the loss.

Example 1.3 shows us that equity can be determined in two ways:

1. *Equity = Assets – Debts*
2. *Equity = Original Equity +/- Profits (Loss) + Capital Injections – Capital Withdrawals*

Neither capital injections nor capital withdrawals by the owner are shown on the income statement. A capital injection is not revenue and a withdrawal is not an expense. Many people have misguided notions about equity. They wrongly think that equity is some sort of reserve stash of money that can be used when things go wrong. This is not true. Equity is *not* cash. Equity represents the investment the owner(s) have made in the business.

## 1.5 Financial Management & Planning

The financial statements are not only composed to report events that have already happened, they are also composed on the basis of proposed plans. In that case they are forecasted or projected financial statements. Making these projected statements is what we'll call financial planning. Financial planning is of crucial importance since it will help to make better informed choices concerning the business activities. In financial management theory, the interests of the owners of the business are the focal point when making those choices.
The function of financial management is twofold: It should decide in what activities the business should invest and it must decide how these activities must be financed. More elaborately we can distinguish the following tasks:

- financial planning;
- investment selection;
- financing decisions;
- monitoring and control;
- planning again.

First and foremost, the financial consequences of certain plans must be shown. On the basis of the projected financial statements, different plans

can be compared to assist selection. When decisions on projects or investments have been made, the business must choose how the investments will be financed. The final task is monitoring and control. Usually a set of key financial ratios is used to check whether the objectives are achieved. In the remainder of this chapter we focus on the financial planning process. The other topics will be discussed in subsequent chapters.

## 1.6 Business Planning

Businesses should develop plans for the future. No matter what a business wants to accomplish, success will not come automatically. Finance should play a central role in the planning process. First we'll have a look at the business planning process in general.

### *Mission And Goal*

The first question a business must ask itself is: What business are we in? It is a simple enough question but not always a simple one to answer. 'What are we?' really is the same question. The answer to this question is formulated in a mission statement. This statement should be short and should give a clear sense of direction for the business.

*Mission Statement Philips*
'We are committed to working together to deliver the innovative products, applications and technologies that will allow our customers to enjoy the best the future has to offer.'

Most mission statements are actually pretty vague and certainly do not formulate specific targets. Therefore they need to be translated into more specific goals.
The goals will show what has to be achieved. Among other things they may be the following:

- the markets the business wants to serve;
- the kind of products which should be offered;
- the size of market-share it wishes to achieve;
- the level of margin on sales;
- the amount of profits for the owners.

The goals should be specific and consistent with the mission.

### *Formulating Alternatives*

Often there are alternative ways to achieve the goals that have been formulated. These alternatives are the strategic options open to the business. An important managerial task is identifying possible options. The first step here is collecting and analyzing information. This information should give management an update on what's going on, both inside – and outside the business. The internal analysis may include the following:

- organizational features and culture;
- marketing & distribution expertise;
- financial strength;
- manufacturing and technological expertise.

The external analysis may include the following:

- developments in the economy;
- customers wants and needs;
- intensity and nature of competition;
- power of suppliers, customers and other groups.

Following the conclusions from the internal and external analysis, management must now formulate alternative ways of achieving its goals. The purpose of formulating alternatives is to prevent tunnel vision and keep an open mind.

### *Option Selection*

When choosing the most appropriate option(s), management must weigh the pros and cons of each possible option. As was stated earlier, an option is a way to reach a certain desired goal. It is a means to an end. However, not all alternatives will be equally attractive. They must be critically assessed to make a final choice. The projected financial statements are used for the financial evaluation of the various options.

## 1.7 Projected Financial Statements

Projected financial statements show the financial results of certain plans of action. In order to compose these statements, estimates must be made. The most important elements to estimate are expected sales, expected expenses and required investments in assets over the forecast period.

### *Projected Income Statement*

Forecasting sales is typically the starting point in the financial planning process. The reason is that other elements such as expenses, inventory levels and required investments will be determined by the level of sales. Sales determine the level of activity in the business.

When the expected level of sales has been determined the next step is to estimate the expenses. The business should forecast what the expenses will be, given the sales level. The distinction between fixed and variable expenses is very important in this context. Variable expenses change in direct proportion to changes in activity level. The variable expenses of a taxi business for instance include the cost of fuel. Fixed expenses on the other hand, do not change in direct proportion to changes in sales level. For instance, the fixed costs of a taxi business include road tax and car insurance.

When sales and expenses have been forecasted, the projected income statement can be prepared.

### *Projected Cash Flow Statement*

All sales revenue must eventually result in a cash receipt. The customers must pay for their purchases. However, payment by the customer will not always coincide with the moment of sale. In many lines of business, sales are on credit. In other lines of business, payment can precede delivery. This is true for the newspaper business where the client has to pay ahead of receiving any newspapers. The expected sales level, in combination with the conditions of payment, will result in an estimate of the cash receipts of a forecast period.

All expenses must result in a payment. Whatever the business uses, it must pay for. But here too, different payment terms for payment do exist. The payments are therefore estimated by starting at the budgeted expenses and then including the terms of payment.

### *Projected Balance Sheet*

The level of sales will also have an effect on the balance sheet. Certain items on the balance sheet will increase automatically when sales increase. These will mainly be the current assets and current liabilities. For instance, when a company's sales increase, the accounts receivable on the balance sheet increases with it.

It is also possible that additional investments in fixed assets have to be made to accommodate a certain level of sales. At some point a taxi business can-

not increase sales further without investing in a new vehicle. It may well be that this investment results in a need for further financing. Equity or long-term loans will not increase automatically with an increase in the level of sales. The projected balance sheet can reveal the need for new equity or new debt. Figure 1.1 shows the relation between the planning process and the financial statements.

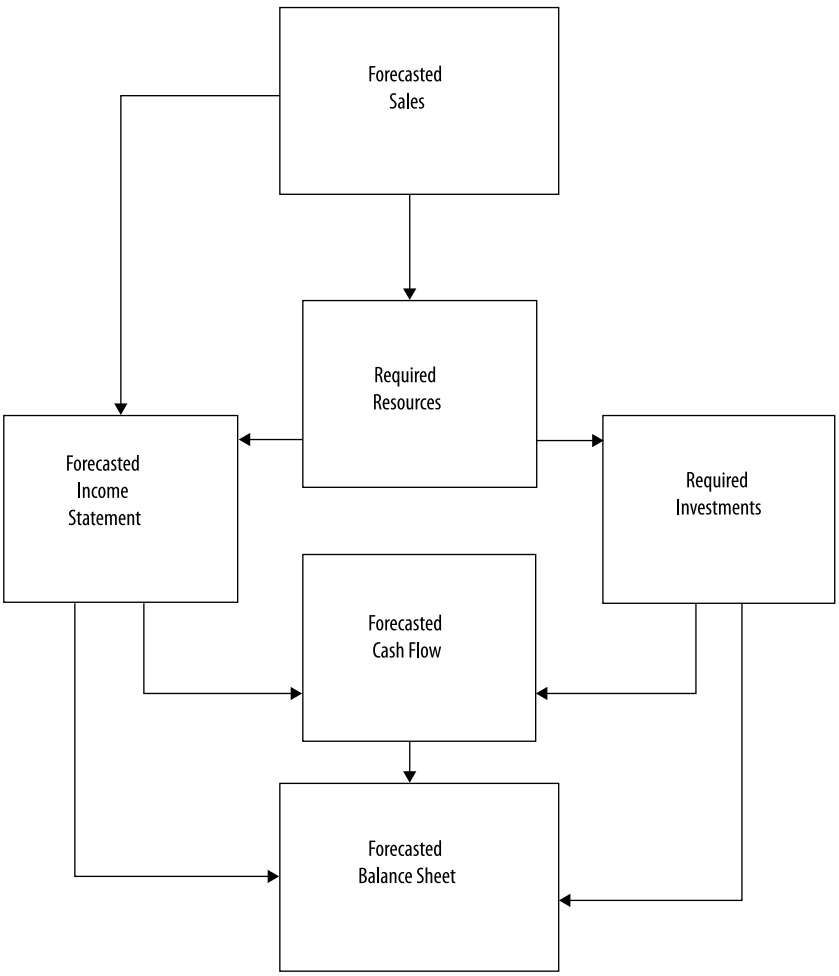


*Figure 1.1 The Financial Planning Process*

## 1.8 Financial Planning for a Trading Business

A trading business buys and resells products without physically changing them. The difference between the purchase and the sales price is the gross profit margin. This margin must cover other expenses such as labor, rent and depreciation in order to make a profit. We will examine the financial planning considerations using an example.

### *Example 1.4 Alpha Trading*

The Alpha Company has prepared the following balance sheet:

*Balance Sheet January 1 2012 ($)*

| Assets | | Sources | |
|---|---|---|---|
| Equipment | 200,000 | Equity | 400,000 |
| Inventory | 350,000 | Loan (8%) | 300,000 |
| Cash | 150,000 | | |
| **Total** | **700,000** | **Total** | **700,000** |

To come up with the projected financial statements for 2012, the following facts have been collected:

- Equipment is depreciated over 10 years to a scrap value of $10,000.
- At the end of the year new equipment is bought for $5,000 and paid for right away.
- Sales are expected to be $250,000 a month. Average term of credit is two months.
- The gross profit margin is 20% of sales revenue.
- By the end of the year the inventory must be cut back to $50,000. This reduction takes place proportionally over the year. Average term of credit on all purchases of inventory is one month.
- Annual redemption on the loan is $30,000. This payment and the annual interest payment are made on the 31st of December every year.
- Labor costs are $400,000. Included in this amount is $50,000 in bonuses that will be paid in 2013.
- All profits will be retained.

We will now first prepare the forecasted income statement.

*Income Statement 2012*

| Item | Working | | Amount ($) |
|---|---|---|---|
| Sales | 12*$250,000 | = | 3,000,000 |
| Cost of sales | 0.8*$3,000,000 | = | (2,400,000) |
| Depreciation equipment | ($200,000 – $10,000)/10 | = | (19,000) |
| Labor costs | | | (400,000) |
| Interest on loan | $300,000*8% | = | (24,000) |
| **Profit** | | | **157,000** |

- Total sales revenue is 12 months of $250,000 each. Conditions of payment have no effect on the income statement. Since the gross margin was 20% of sales, the cost of sales is 80%.
- The labor expenses include the bonus. The fact that the bonus will be paid in 2013 is irrelevant. $400,000 worth of labor services will be used.
- Interest is an expense since it is the price for using a service. The service in this case is borrowing money.
- The investment in new equipment is not an expense.
- The redemption payment is not an expense. Returning something to its original owner never is an expense. When returning a borrowed car you would not consider that to be an expense either, so neither is returning borrowed money.

The next statement to prepare is the cash flow statement.

*Cash Flow Statement 2012*

| Item | Working | | Amount ($) |
|---|---|---|---|
| *Receipts* | | | |
| Sales | $3,000,000*10/12 | = | 2,500,000 |
| *Payments* | | | |
| Purchases | ($2,400,000 – $300,000)*11/12 | = | (1,925,000) |
| Labor payments | $400,000 – $50,000 | = | (350,000) |
| Interest on loan | | | (24,000) |
| Redemption | | | (30,000) |
| Equipment investment | | | (5,000) |
| **Change in cash** | | | **166,000** |

- A credit term of two months implies that when a client buys something he pays for it two months later. This year, the client pays ten out of twelve months.
- The cost of sales is 80% of revenue or $2,400,000 as the income statement showed. This doesn't mean the purchases by Alpha have to be equal to that amount. Here we see that inventory is expected to be $300,000 lower at the end of the year (a decline from $350,000 to $50,000). This means the purchases can be $300,000 lower than the costs of sales. Purchases therefore are $2,100,000. These purchases will not be paid fully in this year. Eleven out of twelve months are paid for since all goods are bought with a one-month term of credit.

The final statement is the balance sheet.

*Balance Sheet December 31, 2012*

| **Item** | **Working** | | **Amount ($)** |
|---|---|---|---|
| Equipment | $200,000 – $19,000 + $5,000 | = | 186,000 |
| Inventory | | | 50,000 |
| Receivables | 2/12*$3,000,000 | = | 500,000 |
| Cash | $150,000 + $166,000 | = | 316,000 |
| **Total assets** | | | **1,052,000** |
| | | | |
| Equity | $400,000 + $157,000 | = | 557,000 |
| Loan | $300,000 – $30,000 | = | 270,000 |
| Trade payables | 1/12*$2,100,000 | = | 175,000 |
| Salary payable | | | 50,000 |
| **Total sources** | | | **1,052,000** |

- The receivables represent 2 months of sales.
- The rise in equity is due to the retention of profit.
- The $30,000 redemption payment results in a $270,000 loan.
- The trade payables are one month's worth of purchases.
- The salary payable is the bonus that still must be paid.

The chief operations of a trading business are the buying and selling of goods. Many students confuse the cost of sales and the purchases of the business. The cost of sales equals the purchase price of the products that have been *sold*. The purchases are the value of products that are *bought* by the business. Naturally the number of products sold in a period is not always equal to the number of

products bought in that period. When the two are different, the inventory will change. The following relationship always holds true:

*Inventory Begin – Cost of Sales + Purchases = Inventory End*

### *Example 1.5 Bravo Trading*

The Bravo Corporation will go into business on January 1. The owners have invested $80,000 and deposited this in the company's bank account. They will sell electronic gadgets in an outlet on Shanghai's buzzing Nanjing Lu. The rent is $10,000 a month, always payable three months in advance. They spend $60,000 to pay for the fixtures and furniture of the shop.
For the first six months, the following projections of sales and purchases were made (in $1,000).

| | Jan | Feb | Mar | Apr | May | June | Total |
|---|---|---|---|---|---|---|---|
| Sales | 150 | 140 | 160 | 180 | 200 | 220 | 1,050 |
| Purchase | 190 | 120 | 140 | 150 | 160 | 170 | 930 |

The suppliers allow a credit term of one month. All customers pay by credit card. The credit card company takes one month to pay Bravo and deducts 2% in fees. The gross profit margin is 20% on sales. The company's remaining expenses are $15,000 a month, including $1,000 depreciation on fixtures. The bank allows an overdraft of $75,000 on the checking account. To assess the financial situation, Bravo's owners want to prepare an income statement for the first half year, a cash flow statement for each of the 6 months and a projected balance sheet at June 30.

*Income Statement ($)*

| Item | Working | | Amount ($) |
|---|---|---|---|
| Sales | | | 1,050,000 |
| Cost of sales | 0.80*$1,050,000 | = | (840,000) |
| Credit card fee | 0.02*$1,050,000 | = | (21,000) |
| Rent | 6*$10,000 | = | (60,000) |
| Other expenses | 6*$15,000 | = | (90,000) |
| **Profit** | | | **39,000** |

*Cash Flow Statement (*$1,000)*

| | Jan | Feb | Mar | Apr | May | June | Total |
|---|---|---|---|---|---|---|---|
| *Receipts* | | | | | | | |
| Credit sales | - | 147 | 137.2 | 156.8 | 176.4 | 196 | 813.4 |
| *Payments* | | | | | | | |
| Furniture | (60.0) | | | | | | (60.0) |
| Purchases | | (190) | (120) | (140) | (150) | (160) | (760) |
| Rent | (30.0) | | | (30.0) | | | (60.0) |
| Other costs | (14.0) | (14.0) | (14.0) | (14.0) | (14.0) | (14.0) | (84.0) |
| Net cash flow | (104) | (57) | 3.2 | (27.2) | 12.4 | 22.0 | (150.6) |
| *Checking account* | | | | | | | |
| – Opening | 80 | (24) | (81) | (77.8) | (105) | (92.6) | 80 |
| – Ending | 80 – 104 = (24.0) | (81) | (77.8) | (105) | (92.6) | (70.6) | (70.6) |

- Both sales and purchases enter the cash flow with a delay of one month.
- The credit card fees of 2% have been deducted from the sales receipts.
- The other expenses result in monthly payments of $14,000 since the monthly depreciation expense of $1,000 is not a payment.
- The checking account balance is shown at the bottom of the statement.

*Balance Sheet June 30*

| **Item** | **Working** | | **Amount ($)** |
|---|---|---|---|
| Fixtures | $60,000 – $6,000 | = | 54,000 |
| Inventory | $930,000 – (0.8*$1,050,000) | = | 90,000 |
| Receivables | 0.98*$220,000 | = | 215,600 |
| **Total** | | | **359,600** |
| | | | |
| Equity | $80,000 + $39,000 | = | 119,000 |
| Payables | Purchase June | | 170,000 |
| Checking account | Cash flow statement | | 70,600 |
| **Total** | | | **359,600** |

The business is healthy enough when looking at the profit figure of $39,000. However, the business does have a cash flow problem in the months February through May when it exceeds its allowance for overdraft. This is a fre-

quently occurring situation for starting and growing businesses. They need to invest a lot in inventory and other assets and this consumes a lot of cash.

The reason why projected financial statements are composed is that they monitor the two conditions that are essential for survival of the business. The first one is profit. Profit is the reward for the owners. Without sufficient reward the owners will not be interested in continuing their involvement in the business. Losses are acceptable however when profits are expected to return at some point. Profit is therefore a condition for survival in the longer run. However, profit is not the sole condition for survival. It is possible for profitable businesses to go bankrupt because of a shortage of cash. Making a lot of sales on credit will result in profits but means cash receipts are delayed, while the business must still pay its own bills. The second condition therefore is having sufficient cash. The projected cash flow statement is the tool to monitor this second condition.
Cash flow statements need to be prepared more frequently than income statements. While it can be sufficient to determine profit every six months, the business will need more frequent insight into its cash position and development. Cash really is the most vital asset of a business. Without sufficient cash a business cannot pay its bills and may go bankrupt. Suppose that in the Bravo example the cash flow statement was composed only for the aggregated six months. Management might have concluded that a checking account allowing a $75,000 overdraft would have been sufficient since the accumulated cash flows will result in an overdraft of $70,600. The more detailed information here revealed that in April the business needs an allowance for overdraft of at least $105,000. An overdraft limit of $75,000 would have resulted in a failure to meet all the payments and could have severe repercussions. The monthly projected cash flow statements bring this problem to the surface. Bravo's management can now counter this problem by asking for an extension to their overdraft limit or by finding other sources of funding.

## 1.9 Financial Planning for a Manufacturing Business

The examples so far were based on trading businesses. The operations, and in turn the financial planning, of a manufacturing business are somewhat more complex. A manufacturing business buys materials and components and turns these into finished products that are sold to the customer. We will discuss a small example that focuses on this aspect.

*Example 1.6 Charlie Manufacturing*

The Charlie Company manufactures a product that costs $30 to make:

| | | | |
|---|---|---|---|
| Raw material: | 2 kg@$5 | = | $10 |
| Labor: | 1 hour@$20 | = | $20 |
| | | | $30 |

The sales price is $35 per unit. Laborers are paid per produced unit. Charlie's balance sheet on January 1 is as follows:

*Balance Sheet January 1 ($)*

| Assets | | Sources | |
|---|---|---|---|
| Finished product | 3,000 | Equity | 12,150 |
| Materials | 750 | Trade payable | 2,100 |
| Receivables | 9,000 | | |
| Cash | 1,500 | | |
| **Total assets** | **14,250** | **Total sources** | **14,250** |

Based on the purchase price we can see that $750/$5 = 150 kg of raw materials are stored. The number of finished products is $3,000/$30 = 100 units.

For this year a sales level of 100 units per month is expected. Because of the expected growth of the business, management wants to have an inventory level of 140 units and 178 kg of raw materials by the end of the year. The increase in inventory must occur gradually over the year. All sales and purchases occur with a two-month term of credit.
Management wants to know what this means for the financial statements. Before getting to the statements it is useful to do some groundwork regarding the required level of production and required purchases of materials. A worksheet helps us to analyze the situation.

*Worksheet Charlie*

| Item | Working | | Amount ($) |
|---|---|---|---|
| Units sold | 12*100 | = | 1,200 units |
| Inventory change | (140 – 100) | = | +40 |
| Units produced | | | 1,240 units |
| Materials required | 1,240*2 kg | = | 2,480 kg |
| Inventory change | (178 – 150) | = | +28 |
| Purchases required | | | 2,508 kg |
| Purchases in money | 2,508*$5 | = | $12,540 |
| Payments required | $12,540*10/12 | = | $10,450 |

The inventory of finished products rises from 100 to 140 units over the year. Since 1,200 are sold this means that 1,200 + 40 = 1,240 units must be produced. That means 1,240*2 kg = 2,480 kg of material are needed for production.
Since inventory of materials must increase by 28 kg, the company needs to buy 2,480 + 28 = 2,508 kg of materials. The purchases in dollars are then 2,508*$5 = $12,540.
Of this amount 10 out of 12 months are paid resulting in a payment of 10/12*$12,540 = $10,450. Furthermore the original trade payables account of $2,100 must be paid within two months.

*Income Statement*

| | | | |
|---|---|---|---|
| Sales | 1,200*$35 | = | 42,000 |
| Cost of sales | 1,200*$30 | = | (36,000) |
| **Profit** | | | **6,000** |

*Cash Flow Statement*

| Item | Working | | Amount ($) |
|---|---|---|---|
| Sales receipts | $42,000*10/12 | = | 35,000 |
| Receivable begin | | | 9,000 |
| Purchases | | | (10,450) |
| Payable begin | | | (2,100) |
| Labor | 1,240*$20 | = | (24,800) |
| **Change in cash** | | | **6,650** |

*Balance Sheet December 31*

| Item | Working | | Amount ($) |
|---|---|---|---|
| Finished product | 140*$30 | = | 4,200 |
| Materials | 178*$5 | = | 890 |
| Receivables | $42,000*2/12 | = | 7,000 |
| Cash | $1,500 + $6,650 | = | 8,150 |
| **Total assets** | | | **20,240** |
| | | | |
| Equity | $12,150 + $6,000 | = | 18,150 |
| Payables | $12,540*2/12 | = | 2,090 |
| **Total sources** | | | **20,240** |

## 1.10 Common Pitfalls

At the end of this chapter we point out once more the common misconceptions that many people have regarding the concepts we have discussed.

*Equity is not cash*. Equity shows how much the owners have invested in the business. Cash is money, either in coins and bills or in the bank.

*Payments are not equal to expenses*. Expenses represent the value of the resources that have been used up. A payment occurs when money changes hands.

*Sales revenue are not equal to cash receipts.* Sales revenue occur when something is sold and delivered to a customer, regardless of the moment of payment by the customer.

*A depreciation expense is never a payment*. Depreciation lowers the book value of fixed assets but does not result in a cash outlay.

*The cost of sales of a business is not the same as the purchases of that business.* The amount of products that are sold by the business can of course be different from the amount of products that are bought by the business. When purchases are not equal to sales, the inventory will change.

*Redemption payments on debt are never part of expenses.* Returning a borrowed car is not an expense, so neither is returning borrowed money. Interest, however, is an expense. Interest is the cost of 'renting' money.

## Summary

In this chapter we briefly looked at the nature of doing business. Next, the ways to communicate the financial facts and financial results of a business were discussed. Business activities are recorded in financial statements. Three such statements were discussed. The balance sheet shows two things. First it shows how much a business has invested in various assets at a certain moment. Second it shows how these assets are financed. The income statement shows the profit a business has made. The cash flow statement shows the changes in the cash position of the business. The income and cash flow statements show us the financial aspects of activities that took place during a period. The balance sheet on the other hand doesn't show the activities but rather the outcome of those activities.
We have also seen what role the financial statements play in the planning process of the business. Financial planning should show whether proposed plans of action will generate profit. Profit is the income for the owners. No operation can last without sufficient income for those involved. Second, financial planning must show whether the operations generate sufficient cash to cover payments. Having sufficient cash is vital for survival. Lastly, financial planning must indicate the effect of plans on investments required. This in turn will reveal the need for any additional sources of funding.

## Review Questions (true/false)

1.1 Equity is an amount of cash available for emergencies.
1.2 Expenses are equal to the value of resources that have been used up.
1.3 When the assets on the balance sheet have increased, equity must be higher too.
1.4 A profit is equal to the increase of cash.
1.5 Equity always equals assets – debts.
1.6 A depreciation expense is never shown on the cash flow statement.
1.7 A surplus on the cash flow statement means the business made a profit.
1.8 Depreciation lowers the book value of an asset.

1.9 Equity can become negative.
1.10 A fixed asset cannot be moved without damaging it.

## Exercises

### Exercise 1.1

We'll track Mr. Gill's business from example 1.1 in this chapter for one more month. The balance sheet ending January is the one beginning February.

*Balance Sheet February 1 ($)**

| Assets | | Sources | |
|---|---|---|---|
| Inventory | 22,500 | Equity | 35,000 |
| Receivables | 16,000 | Trade payables | 17,500 |
| Cash | 14,000 | | |
| **Total assets** | **52,500** | **Total sources** | **52,500** |

* All sales and purchase prices remain as previously stated.

In February the following takes place:

- On February 1, Gill buys a secondhand car for delivering his products to customers. The price is $6,000 and it is paid for in cash. The car will last 5 years and will have no scrap value.
- A customer buys 3,000 bottles of olive oil. He pays 30% immediately and agrees to pay the rest in March.
- Customers pay the $16,000 they owed for sales made in January.
- Mr. Gill buys 4,000 bottles. Mr. Gill pays 60% on delivery and agrees to settle the remaining 40% in April.
- Gill pays the unpaid purchases from January.
- By the end of the month Mr. Gill receives an angry call from his landlord. February's rent hasn't been paid. Apologizing deeply, Gill promises to pay this month's rent first thing in March.

**Required:**

a The income statement for February.
b The cash flow statement for February.
c The balance sheet at the end of February.

**Exercise 1.2**

Mr. Cash owns a business for which he has prepared the following balance sheet.

*Balance Sheet March 1 ($)*

| Assets | | Sources | |
|---|---|---|---|
| Inventory | 15,000 | Equity | 16,000 |
| Receivables | 7,800 | Payables | 8,000 |
| Cash | 1,200 | | |
| **Total assets** | **24,000** | **Total sources** | **24,000** |

The inventory is valued at the purchase price of $20 per unit. Products are sold for $25 a unit.

During March the following takes place:
- 600 units are sold. The client pays $5,000 now and the rest will be paid in May.
- 500 units are bought from the supplier on credit. Purchase price still is $20.
- $6,000 is received from clients related to sales made in January.
- A $7,000 bill from a supplier, dated February 15, is paid.
- The employee receives a regular salary of $1,300 a month. He earned $200 extra in overtime. He agrees that Mr. Cash will pay him the regular salary now and the overtime will follow in April.

**Required:**

a The income statement for March.
b The cash flow statement for March.
c The balance sheet at the end of March.

**Exercise 1.3**

Ms. Chen runs a shop that sells little dolls. She has just prepared the balance sheet.

*Balance Sheet March 1 (€)*

| Assets | | Sources | |
|---|---|---|---|
| Car | 9,700 | Equity | 21,900 |
| Inventory | 12,000 | Trade payables | 10,300 |
| Receivables | 5,600 | | |
| Bank | 4,900 | | |
| **Total assets** | **32,200** | **Total sources** | **32,200** |

The inventory consists of 6,000 units. The purchase price will stay the same for the rest of the month. The products are sold for €3 each.

In March the following transactions occur:
- A client buys 4,000 units. He will pay the amount owed in April.
- Ms. Chen buys 3,500 units. The supplier demands immediate payment of 60% of the sum due and allows Ms. Chen to pay the rest in April.
- A client pays old bills worth €5,000.
- Ms. Chen pays some bills to suppliers for a total of €4,000.
- The monthly depreciation on the car is €400.
- The monthly rent of €5,700 has not been paid.

**Required:**

a The income statement for March.
b The cash flow statement for March.
c The balance sheet at the end of March.

**Exercise 1.4**

On January 1, Delta trading reports the following balance sheet:

*Balance Sheet ($)*

| | | | |
|---|---|---|---|
| Buildings | 480,000 | Equity | 527,400 |
| Equipment | 150,000 | 8% Loan | 190,000 |
| Inventory | 30,000 | Trade payables | 148,000 |
| Receivables | 200,000 | Expenses payable | 9,600 |
| Cash | 15,000 | | |
| **Total** | **875,000** | **Total** | **875,000** |

To assist the planning process, the following information for the coming year has been gathered:

*Projected Income Statement ($)*

| | |
|---|---|
| Sales | 1,500,000 |
| Cost of sales | (1,125,000) |
| Depreciation building | (24,000) |
| Depreciation equipment | (10,000) |
| Other expenses | (240,000) |
| Interest | (14,800) |
| **Profit** | **86,200** |

- Both sales and purchases occur with a two month term of credit.
- Sales and purchases are divided evenly over the year.
- The required inventory level at the end of the year is $105,000.
- Annual redemption on the loan is $10,000 and is paid on July 1.
- The interest on the loan is paid twice a year on July 1 and on December 31.
- During the year $6,000 is paid for the investment in new computer equipment.
- Depreciation on these computers is already included in the income statement.
- The other expenses will be paid one month after they were made. These expenses occur evenly over the year.

**Required:**

a The cash flow statement for this year.
b The balance sheet at year end.

**Exercise 1.5**

Last year, Echo trading reported sales of $1,300,000. Their balance sheet is as follows:

*Balance Sheet January 1 ($1,000)*

| Assets | | Sources | |
|---|---|---|---|
| Premises & Fixtures | 580 | Equity | 750 |
| Inventory | 260 | Trade payables | 300 |
| Receivables | 250 | Tax payable | 96 |
| Bank | 56 | | |
| **Total** | **1,146** | **Total** | **1,146** |

In January, Echo plans to invest $50,000 in a new showroom to improve service to customers. Sales are therefore expected to be 20% higher than last year. Margin on sales is 25% and customers get 12 weeks credit. Because of increasing sales, the inventory should be 20% higher by the end of this year. The credit term on purchases is 8 weeks. Sales and purchases occur evenly over the year.
General overhead expenses are $230,000 (including $50,000 for depreciation of premises and fixtures).
Selling expenses are $90,000 (including $12,000 depreciation on the new showroom). Overhead and selling expenses are paid when incurred.
The $96,000 tax bill must be paid in April. Taxation for this year is expected to be 30% of profits and is payable 4 months after year end. In December, the owners will receive 40% of profits after tax. The bank allows no overdraft.

**Required:**

a The Income statement for this year.
b Four quarterly cash flow statements (quarter = 13 weeks).
c The Balance sheet at year end.
d Comments on the financial situation of Echo.

**Exercise 1.6**

Foxtrot's operation is a simple production process involving only materials and labor. At the start of the year they have 1,800 finished products in inventory, valued at cost of $16 per unit. This $16 includes material costs of $12 and $4 in labor costs. One product contains three kilograms of materials. At the start of the year, 4,580 kilograms are in store. The receivables account shows $24,000 and the only other asset is the checking account, which holds $5,000. Trade payables are the only debt and total $11,000.

**Required:**

a Give the balance sheet for January 1.

Management wants to achieve a gradual reduction of inventories over the year. By the end of the year there should only be 900 finished products in inventory. Available materials should be reduced to 2,000 kilograms. Monthly sales are 980 products at $20 per unit. Sales and purchases are on credit, both with a term of 1.5 months. Laborers are paid on a piece work basis.

**Required:**

b The monthly production level.
c The monthly purchases of materials.
d The income statement for this year.
e The cash flow statement for this year.
f The balance sheet at year end.