



Apples & Oranges™

Creating value
Read More About It
in business

Apples & Oranges™
3.0 Read More About It

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Make a difference

An enterprise or a business mean different things to different people. See illustration at left.

But, we can all agree on this: we are dependent on the business and the business is dependent on us. We are there to make a difference.

We are there to create value for **our customers**. They are our reason for being.

We are there to create value for **our people**. We all want a reason for being.

We are there to create value for **the owners**, the shareholders. They are our means for being.

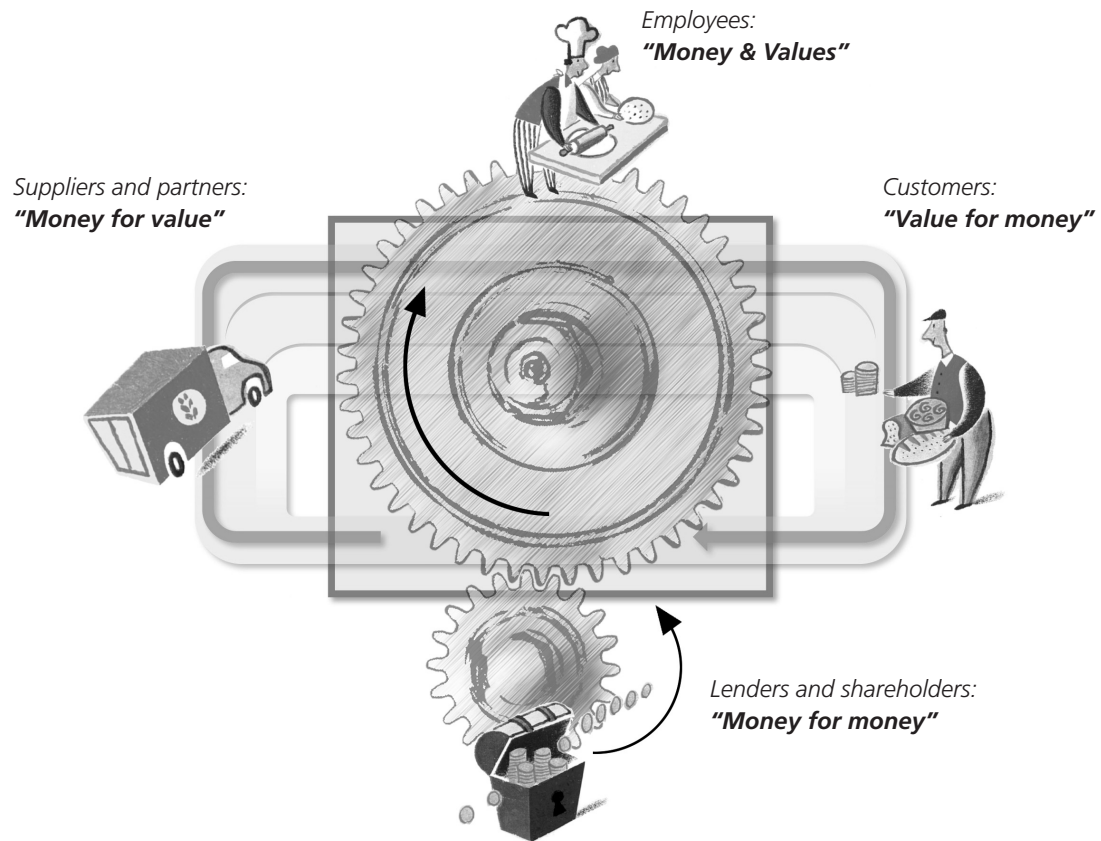
We are there to create value for **society**. How would the world look without it?

As we are in this together, it seems to be a good idea to strive for a common frame of reference: How does the business work, how do we find the potentials for improvement and how do we tap them?

It is easy to be intimidated by the way a business is described in financial reports and analysis. This booklet is meant to provide you with a shortcut to some basic understanding as well as inspiration – so that you understand how you can make a difference.

Klas Mellander

Chief designer, Celemi



The business clockwork

Different stakeholders may have different reasons for staying in the relationship. But that does not necessarily mean that they cannot share the same view of how value is created.

PART I:

The mechanisms of a business

Raise prices! Sell more! Cut costs!

This is the gospel we have heard throughout the years. But now we hear:

Create value!

What is the difference – if any?

Bottom line redefined

The traditional “bottom line” was the net profit in the profit and loss statement. Profit in the short run was an indicator of the business’ ability to earn money. And why not? For many years the marketplace was fairly stable over time.

This is no longer the case. The speed of change in the marketplace has increased. Globalization and development of new technologies have introduced new rules. The individual has become more skilled and more demanding. The intangible assets have become as important as the tangibles. Shareholders keep a sharper eye on the business.

A guided tour

To create value we need to know how business works, so that we can find the potentials... and tap them. The business finance information is a useful source – if you know how to interpret it.

In this part we give you a guided tour through the basics.

The simple model

The pictures at right show the business as a chain of value added. This simple model is the starting point for everything that has to do with business finance.

This is how it works:

You use money to buy equipment, materials and components or expertise...

People and equipment are used to add value, and

...the finished products (goods and services) are sold to customers.

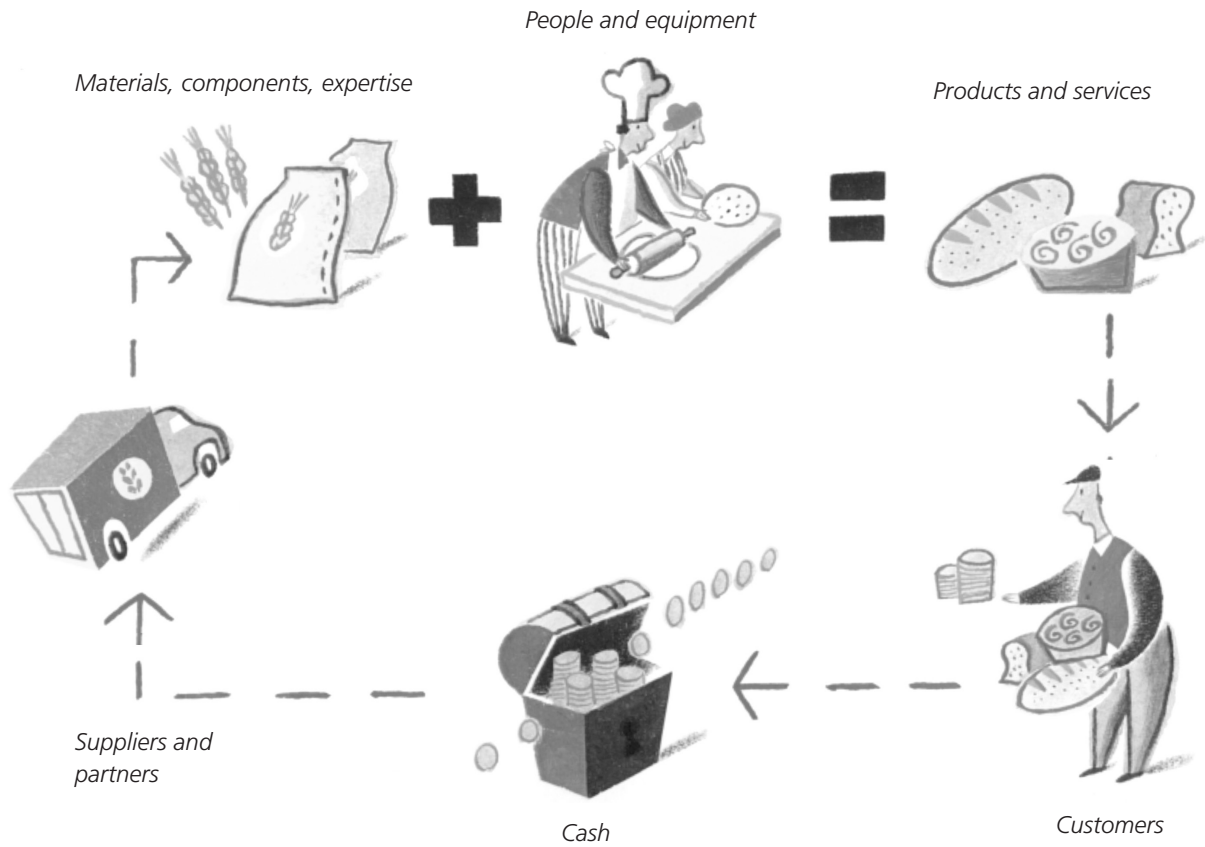
In return you get money...

...that you use to buy equipment, materials and so on...

Experts call this a step-by-step transformation of resources: money becomes material and labor, material and labor are transformed into new products and services...

To be able to manage this (in reality very complex) merry-go-round, you need some simple way of describing all the transactions that are involved, a way of keeping track of where your resources are at any one time. Regardless of what shape they are in...

The business: a chain of value added



Money as the yardstick for value

They say that you cannot compare apples and oranges, meaning things that are intrinsically different in different shapes.

But that is exactly what business finance is about. By using a common yardstick, it is possible to compare... apples and oranges.

Many years ago, at different times in different places, the old way of trading bread for milk or fixing a roof for a half of a wild boar became impractical.

The need for a way of identifying value in order to exchange it freely gave rise to the concept of a value carrier:

Money.

Over time, "money" has taken on many shapes and sizes: shells, copper, gold, salt (hence the word salary!), coins, bills...

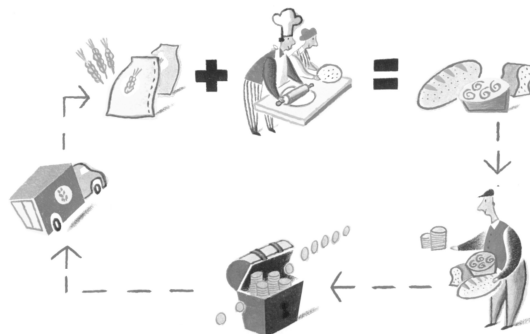
Today money is mostly ones and zeros crisscrossing the world through cables or as electronic waves in the atmosphere...

But regardless of all this: We are using numbers (with a currency symbol next to it) to represent the values involved in the added value chain.

Money makes the world go round...

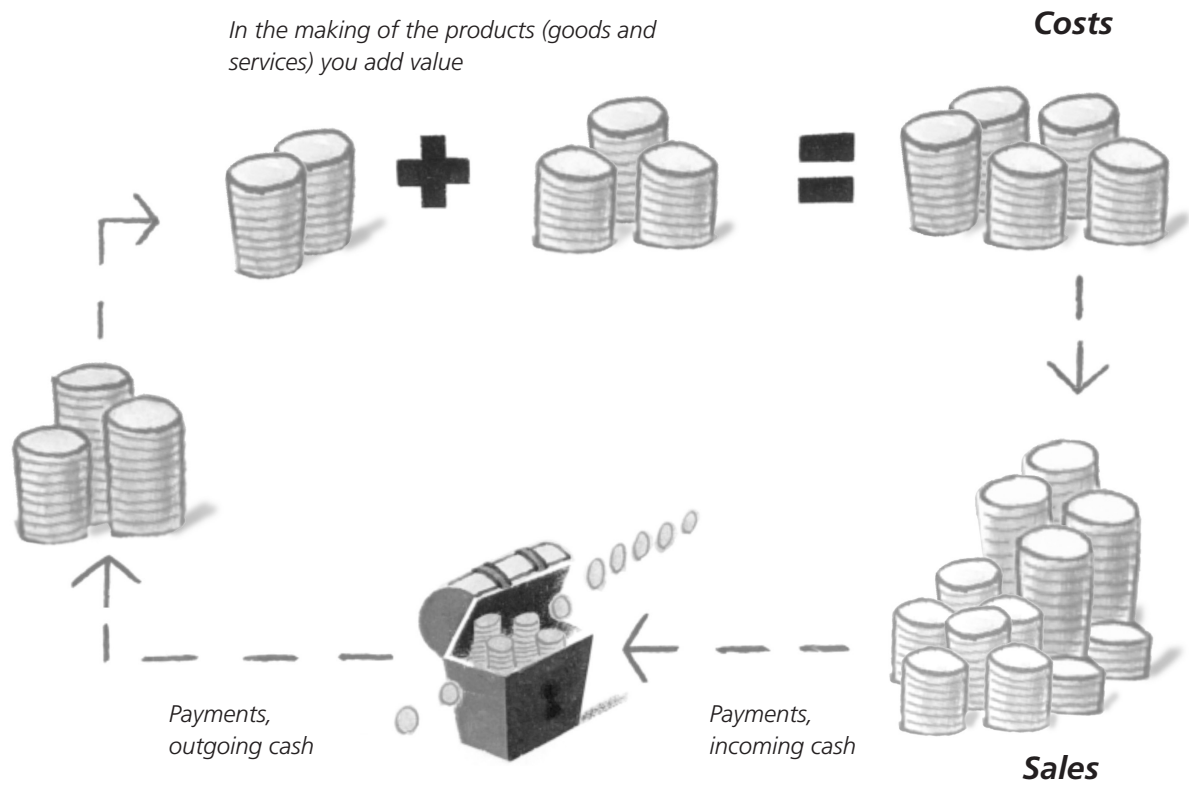
**If you get more money coming in than going out,
you are in business.**

If not, you are either going bankrupt or investing to earn money in the future, in which case you may need to borrow money until you actually do earn money.



Business finance

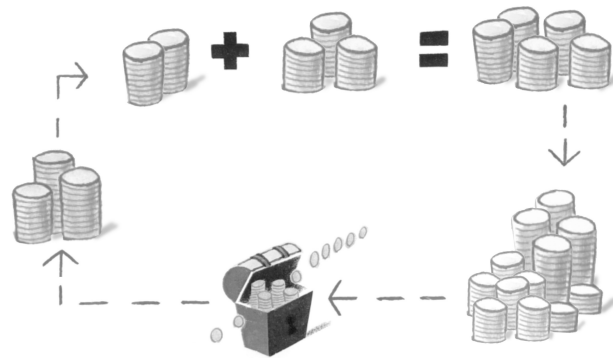
The purpose is to keep track of all transactions and transformations in a strict mathematical way by using one single currency (yardstick): money.



Value coming in and going out

In the world of business finance all values that leave the company are referred to as costs.

In return you get revenues, which is then value coming in to the company. Revenues are often called sales.



For practical reasons costs are put into different categories:

Costs that are directly related to the product or service (mainly materials and labor) are called direct costs or, more commonly, **cost of goods sold** or **cost of services sold**.

In addition to this, you have some more general costs, referred to as **general expenses** or **overhead**. These include sales and marketing and administration. Research and development is sometimes included, but is entered here as a separate item.

Obviously the price (the revenue) has to be greater than the cost of goods sold. Otherwise, there will be no contribution to cover the overhead.

This is also why the difference between revenues and cost of goods sold is referred to as **contribution**.

The cost of the equipment is a little trickier even if the principle is simple: If you purchase a machine paying 10 million and expect it to last five years, you should regard 2 million as a cost each year (1/5 of the purchase price). This is called **depreciation**. More about this on page 16.

The overhead (general expenses) and the depreciation can be regarded as **common costs**.

Through this, we have designed a simple but very accurate way of describing a business operation: the **profit & loss statement**.



Profit & Loss Statement

(In millions)

Sales	+	<u>100</u>
Cost of goods sold	-	<u>50</u>
Contribution	=	<u>50</u>
Overhead	-	<u>35</u>
Development	-	<u>5</u>
Depreciation	-	<u>5</u>
Total common costs	-	<u>45</u>
Operating profit	=	<u>5</u>

Where is the money?

If you take a snapshot of the business merry-go-round you will find that you can identify where the values (money) are at any given moment.

The picture at the right probably says it all.

Current assets

In the outer circle you find the so-called **current assets**:

- Inventory (stocks and ongoing production)
- Quick assets: the cash at hand and what the customers owe you (the accounts receivable)

Fixed assets

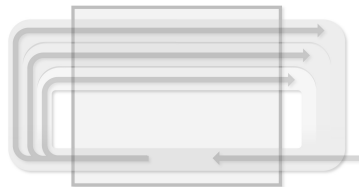
In the inner circle you find the **fixed assets**:

- The value of land and buildings (property)
- The value of machines and other equipment (plant and equipment)

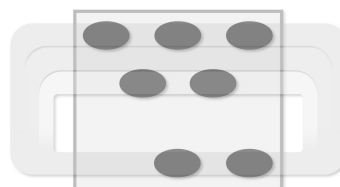
Total assets

Put all together, these are the means necessary to make the business work, the total assets of the company. At least according to traditional bookkeeping. And this is what you will find in a **balance sheet** in the company's annual report.

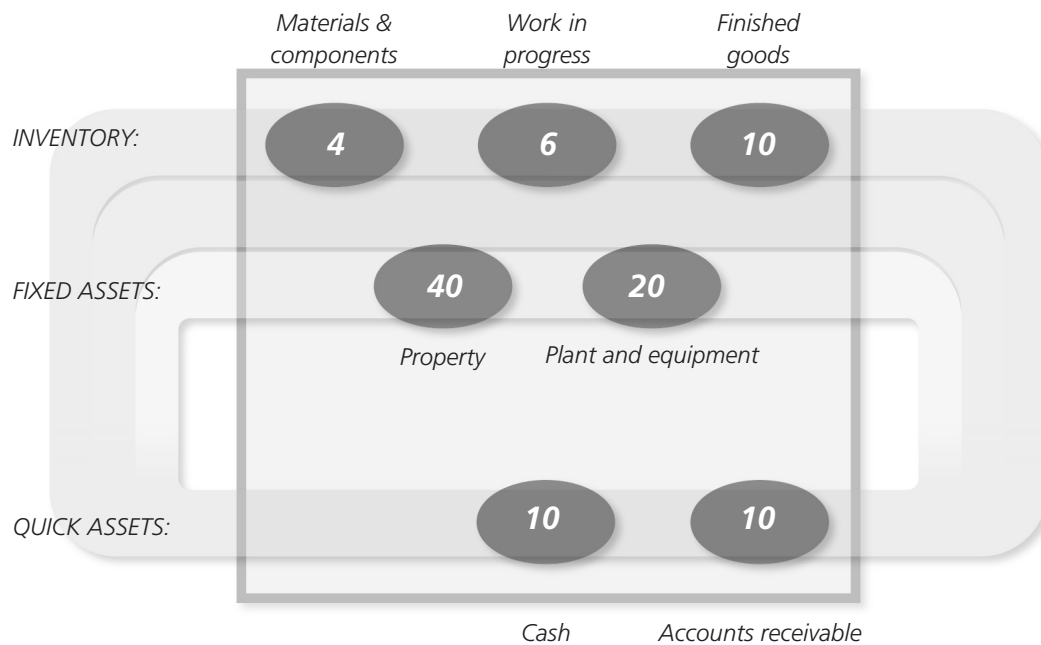
(But of course, you will ask yourself: What about people or satisfied customers being the most important asset; what about patents, goodwill, copyrights, culture, brand image, competencies, know-how... being valuable assets? We will address these issues later on.)



The Profit & Loss statement shows how values are coming in and going out.



The Balance sheet shows where the values (assets) are at a specific moment.



Balance Sheet

(In millions)

ASSETS

Cash & equivalents	+	<u>10</u>	
Accounts receivable	+	<u>10</u>	
Materials & components	+	<u>4</u>	
Work in progress	+	<u>6</u>	
Finished goods	+	<u>10</u>	
Total current assets	=		<u>40</u>
Plant and equipment	+	<u>20</u>	
Property	+	<u>40</u>	
Total fixed assets	=		<u>60</u>
Total assets	=		<u>100</u>

Cost of equipment = depreciation

One interesting and important business finance concept is depreciation – but it is also a common stumbling-block to understanding.

Let us try to explain

Let's say that you bought a lawn-mower and paid 500 for it. Of course you could say that the first year it was very expensive to use, but on the other hand you had no cost at all the following years. But, does this reflect reality? If you intend to use the lawn-mower for, say, five years, it is more realistic to say that the cost of the lawn-mower is 100 per year, as shown in the picture.

This is the pattern: You paid 500. One year later, you regard 100 as a cost, called depreciation. The value of your lawn-mower is now down to 400. The second year another 100 is depreciated and the remaining value is now 300.

After five years the value of your lawn-mower is zero. This might not be the case in reality, but this is how it is done in bookkeeping.

In your personal life you can calculate this either way. In a company you are not allowed to regard the entire investment as a cost the first year because of tax regulations.

In the balance sheet

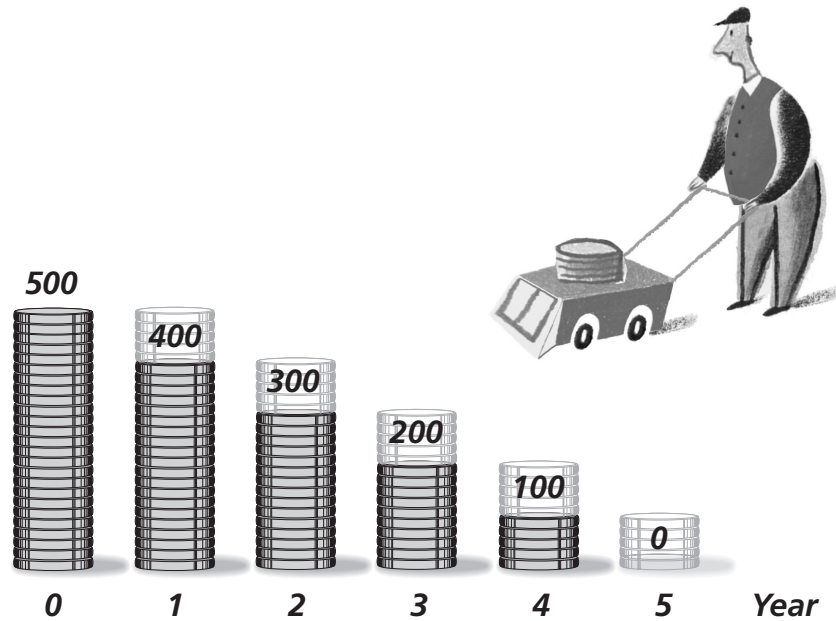
The value of plant and equipment is reduced from one year to the next.

In the profit and loss statement

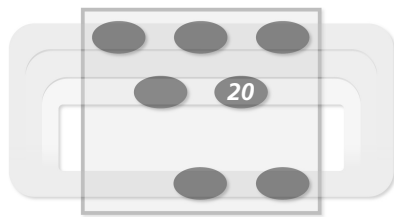
Depreciation is a value that leaves the company. In this sense it should be regarded as a cost.

Problem

As depreciation is based on a standard formula, you have good reason to ask yourself: How well does the book value (the remaining value after depreciation) reflect the true value of the assets?



Depreciation is regarded as a cost in the profit and loss statement (the value has left the company). The corresponding decrease in value of plant and equipment is shown in the balance sheet.

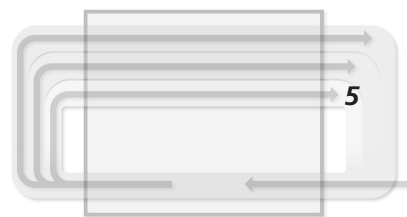


Last year This year

Plant & Equipment	25	20
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In the Balance Sheet

The depreciation corresponds to a reduction in value of plant and equipment.



This year

Depreciation	- 5
---------------------	------------

In the Profit & Loss Statement

The difference is recorded as a cost (= a value that left the company).

Who owns the money?

Where does the money, used in the business merry-go-round, actually come from? Who owns it?

There are two major sources:

Money from the owners. This includes the money that the original shareholders paid for the shares when the company was formed together with the money that the company has earned throughout the years and that stays in the operation. This money belongs to the company. It is called **equity**.

Borrowed money. This is actually owned by the bank or other lenders. It includes what you owe your suppliers i.e. invoices not yet paid.

All this money is called **liabilities**.

Increasing the equity

Now and then, you can ask the owners for more money as a way of increasing the equity fast. You can also ask other people or institutions for money and in return give them a share of the ownership to the company.

The shareholders have a primary goal in mind: They expect a return on their investments that is greater than what they would get from saving the money in a bank account.

In the balance sheet

The lenders' and the owners' stake in the business is reported as a separate section in the balance sheet (Liabilities & Equity).

In the profit and loss statement

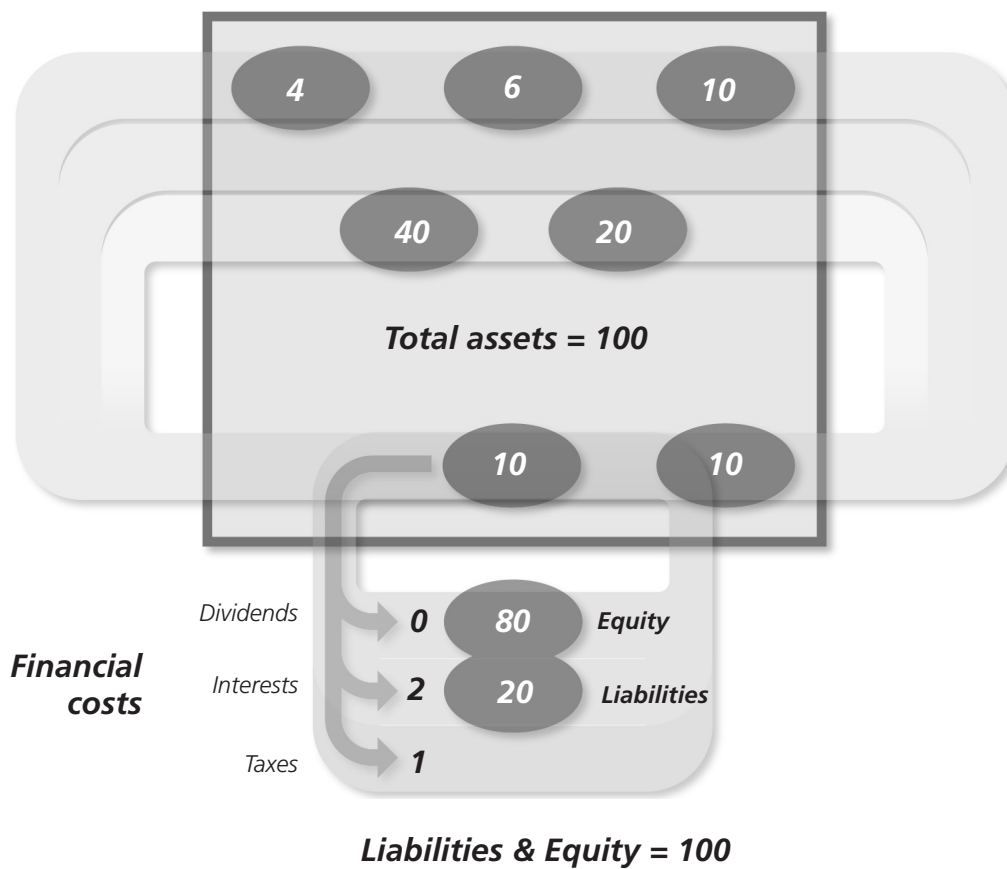
To the lenders you pay **interest**.

To the owners you (sometimes) pay **dividends**. (There is always this choice for the company about how to use the profit: How much should stay and continue to grow, how much should be paid as dividends?)

These are regarded as costs, and are referred to as **financial costs** (as opposed to operating costs).

In a similar way, money that the company has placed in, for example, a bank account generates interest. This is called **financial income** (as opposed to revenues from the operation).

Finally, we pay taxes. What is left is the **net profit**.



From the Profit & Loss Statement

Operating profit	=	5
Interest expense	-	2
Profit before taxes	=	3
Taxes (1/3)	-	1
Net profit / loss	=	2

From the Balance Sheet

Equity	+	80
Liabilities	+	20
Total	=	100

All in all...

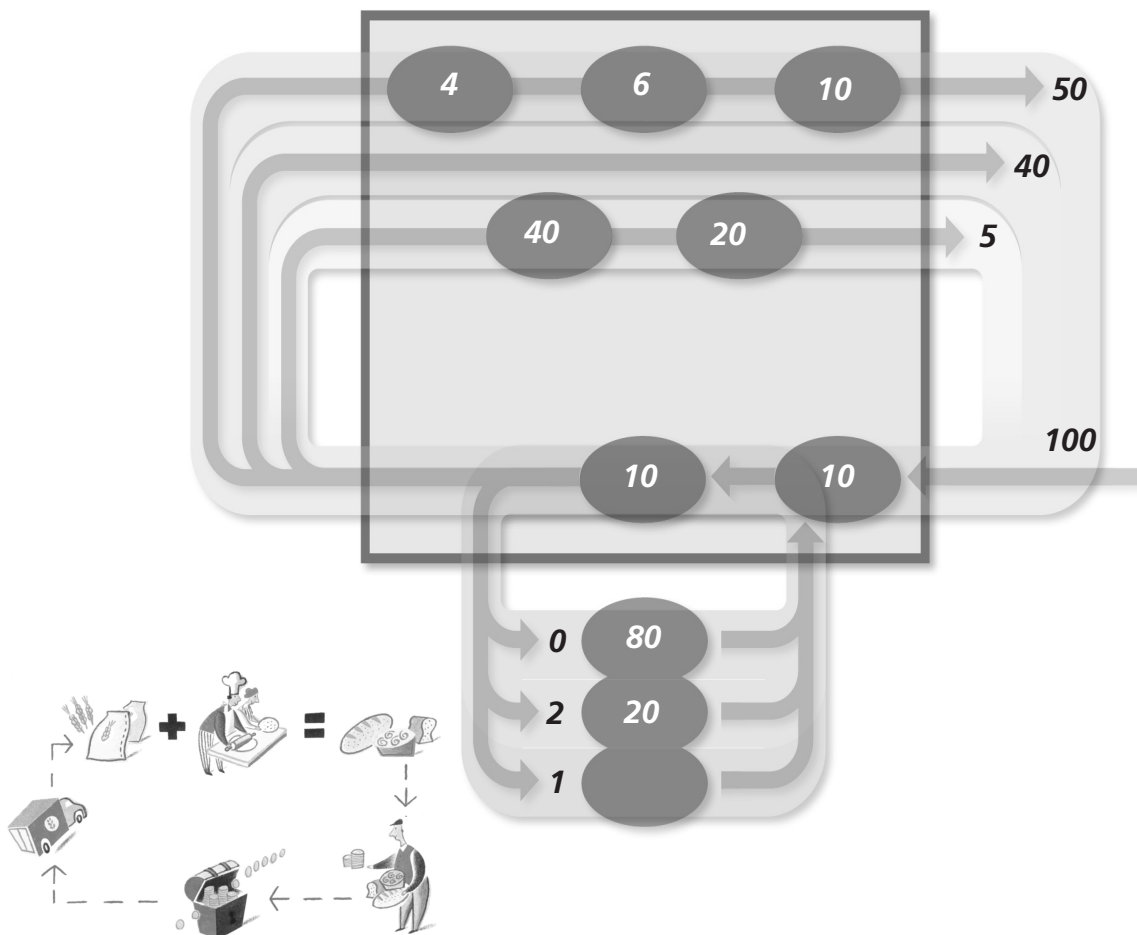
In this summary overview you can easily see how the circulation of capital (below) is captured in the financial statements (right).

You could say that financial statements are a model of the business, expressed in monetary terms.

Financial statements

Incoming and outgoing values are shown in the Profit & Loss Statement.

The assets (the values circled) are registered in the Balance Sheet. The model below shows where the assets can be found ("inside the company") as well as the amount found in liabilities and equity.



Profit & Loss Statement

(In millions)

Sales	+	100
Cost of goods sold	-	50
Contribution	=	50
Overhead	-	35
Development	-	5
Depreciation	-	5
Total common costs	-	45
Operating profit	=	5
Interest expense	-	2
Profit before taxes	=	3
Taxes (1/3)	-	1
Net profit / loss	=	2

Balance Sheet

(In millions)

ASSETS

Cash & equivalents	+	10
Accounts receivable	+	10
Materials & components	+	4
Work in progress	+	6
Finished goods	+	10
Total current assets	=	40
Plant and equipment	+	20
Property	+	40
Total fixed assets	=	60
Total assets	=	100

LIABILITIES & EQUITY

Loans	+	20
Total liabilities	=	20
Beginning balance	+	78
Profit / loss this year	+	2
Total equity	=	80
Total liabilities and equity	=	100

Yet another version...

Many people find the picture at the right to be a helpful way of organizing the business finance data, as it captures all major values and shows how they are related – the upper part is from the Profit & Loss Statement and the lower part is from the Balance Sheet.

(This version is based on the duPont model – developed some eighty years ago by an engineer at duPont who wanted to get a better view of what the finance people were actually talking about.)

Profit & Loss Statement

(In millions)

Sales	+	100
Cost of goods sold	–	50
Contribution	=	50
Overhead	–	35
Development	–	5
Depreciation	–	5
Total common costs	–	45
Operating profit	=	5
Interest expense	–	2
Profit before taxes	=	3
Taxes (1/3)	–	1
Net profit / loss	=	2

Balance Sheet

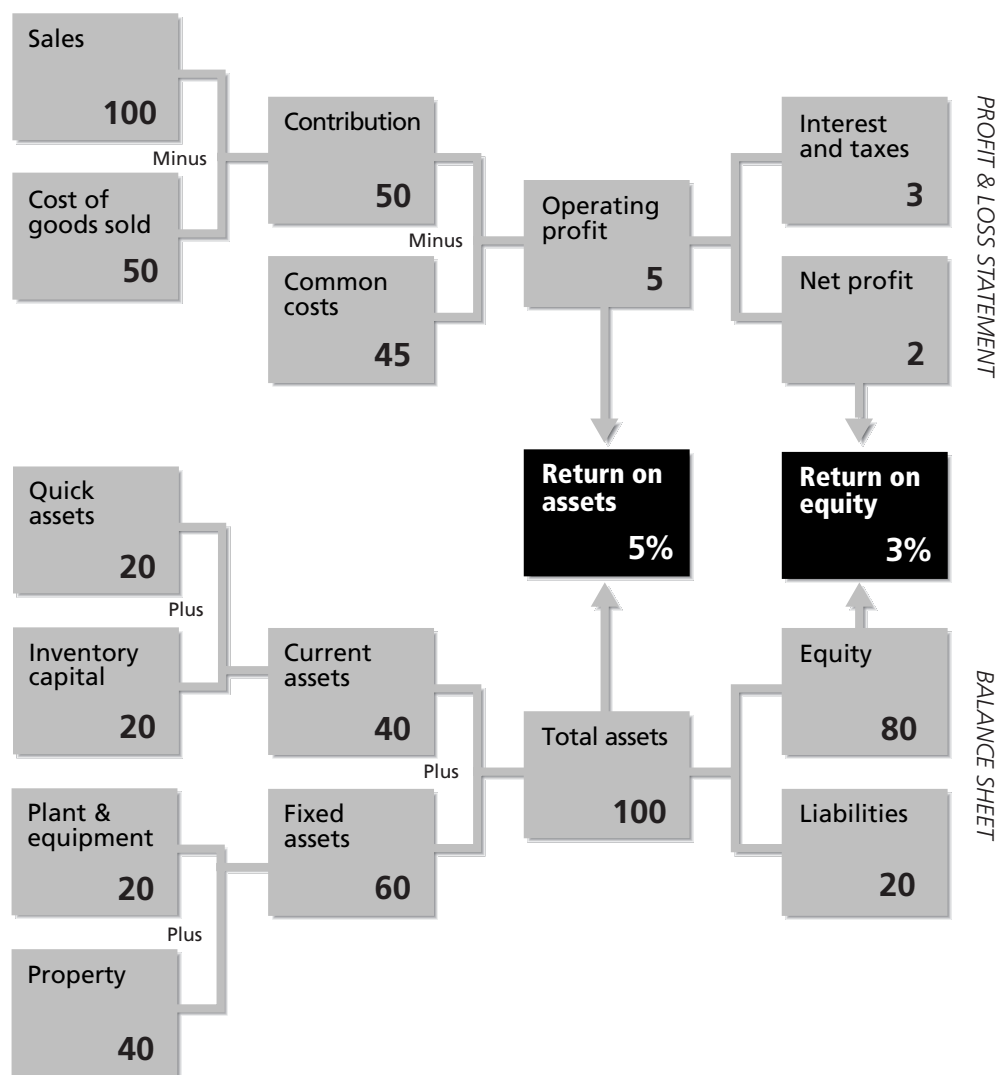
(In millions)

ASSETS

Cash & equivalents	+	10
Accounts receivable	+	10
Materials & components	+	4
Work in progress	+	6
Finished goods	+	10
Total current assets	=	40
Plant and equipment	+	20
Property	+	40
Total fixed assets	=	60
Total assets	=	100

LIABILITIES & EQUITY

Loans	+	20
Total liabilities	=	20
Beginning balance	+	78
Profit / loss this year	+	2
Total equity	=	80
Total liabilities and equity	=	100



Quick assets =

Cash and equivalents + accounts receivable

Inventory capital =

Materials and components + work in progress + finished goods

Return on Assets (ROA)

Indicates how well the capital (assets) has been used, see the following pages. (Operating profit divided by total assets, expressed as percent.)

Return on Equity (ROE)

Indicates how well the owners' money (equity) has been used. (Net profit divided by equity, expressed as percent.)

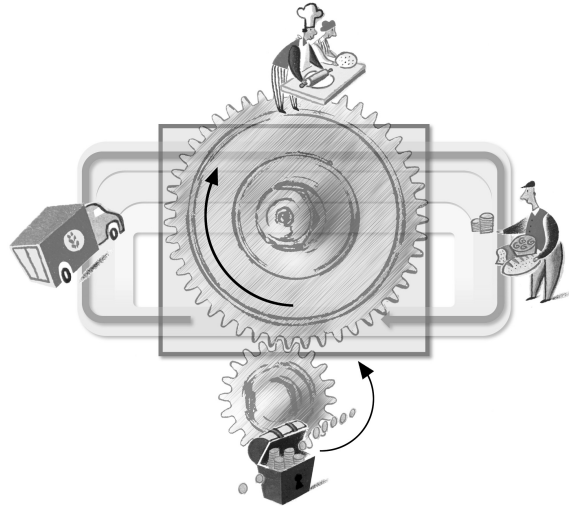
How are we doing?

The traditional way of describing a business in financial terms could be summarized like this:

The stakeholders have one thing in common, they will stay in the relationship as long as the business clockwork is running as intended: creates the expected value... now or later.

The small cogwheel (lenders and shareholders) provides the money necessary for the bigger cogwheel (the value added chain) to work.

How do we know then, that we make enough money to maintain the stakeholders' interest to stay with the company? Do we use the invested capital well enough?



How profitable is the business?

A simple and common way of measuring the performance of a business is to compare the operating profit to the amount of assets used in making it.

If you include all assets, this is called the **Return on Assets (ROA)**.

Often, though, you do not include cash and/or accounts payable when calculating the return. The key indicator is then called **Return on Capital Employed (ROCE)** – meaning the return on the capital that is tied up (employed) in the operation: inventory, plant and equipment, etc.

How much cash is the business generating?

Of increasing interest, though, is how much cash the operation generates in a year. This is the difference between incoming cash (what the customers pay) and outgoing cash (what you pay) during the year. Investments are not included, nor are the changes in cash due to an increase or decrease in liabilities.

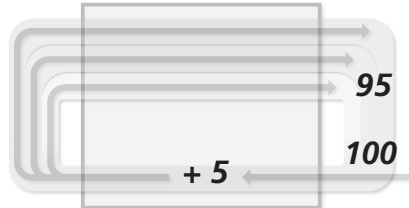
This is called **cash flow** and is seen as a fairly accurate measure of business performance for reasons that we will soon examine.

Return on capital employed (ROCE)

How the performance of a business is sometimes measured.

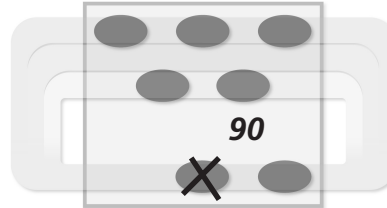
Operating profit

Sales minus operating costs



Capital employed

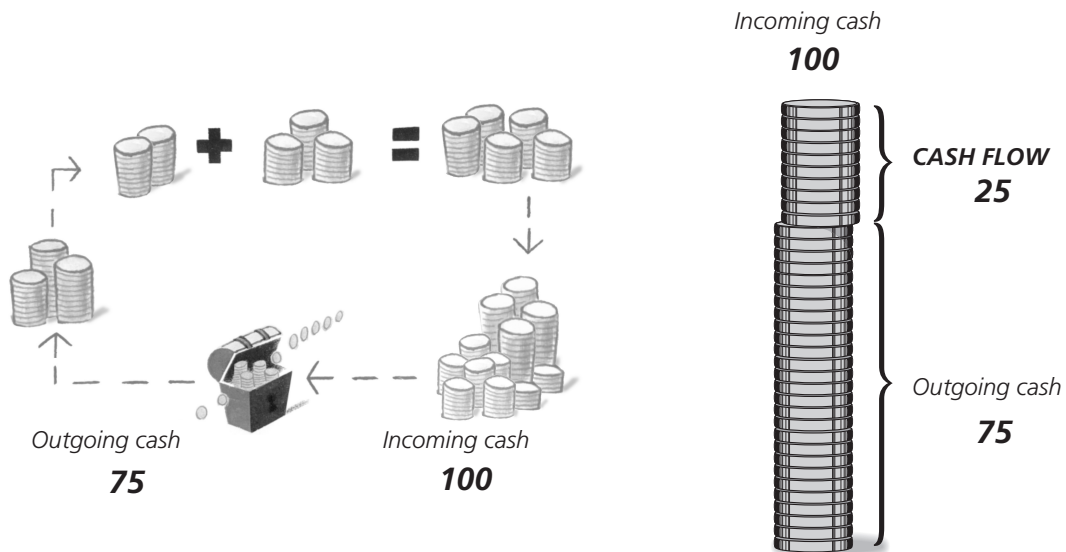
All assets except cash (and accounts payable)



To generate a value of 5 in operating profit, we have used assets at a value of 90. This equals a return of 6% (5 divided by 90).

Cash flow

Today, the ability of the business to generate cash is seen as a very important measure of a company's performance.



Do you create or destroy value?

The question is: How much profit and cash flow should the business generate to be doing OK?

To know this you need to have an idea about what the capital is actually costing you – in terms of both interest to the lenders and return to the investors.

Cost of capital

Let's say that your operating profit is 10 and the capital employed is 100. Your return rate is then 10%. Suppose now that the entire capital used is borrowed money and that you have to pay 12% in interest for it. In this case you are obviously losing money, as you have to pay 12 (cost of capital) to earn 10 (operating profit).

For borrowed money there is an interest rate that is known. But what about the equity? Is there a cost, a kind of interest rate, also for the owners' money?

Yes, there is.

The owners have a certain expectation. It may vary from situation to situation, but as a rule of thumb the general growth rate in the stock market is often regarded as the minimum return rate. If the risk is high they expect even more...

In this way you can also put an interest rate on equity.

This means that you can determine how much the capital you are using is actually costing you. This return rate is called **Weighted Average Cost of Capital (WACC)**, see next page.

As the shareholders see it

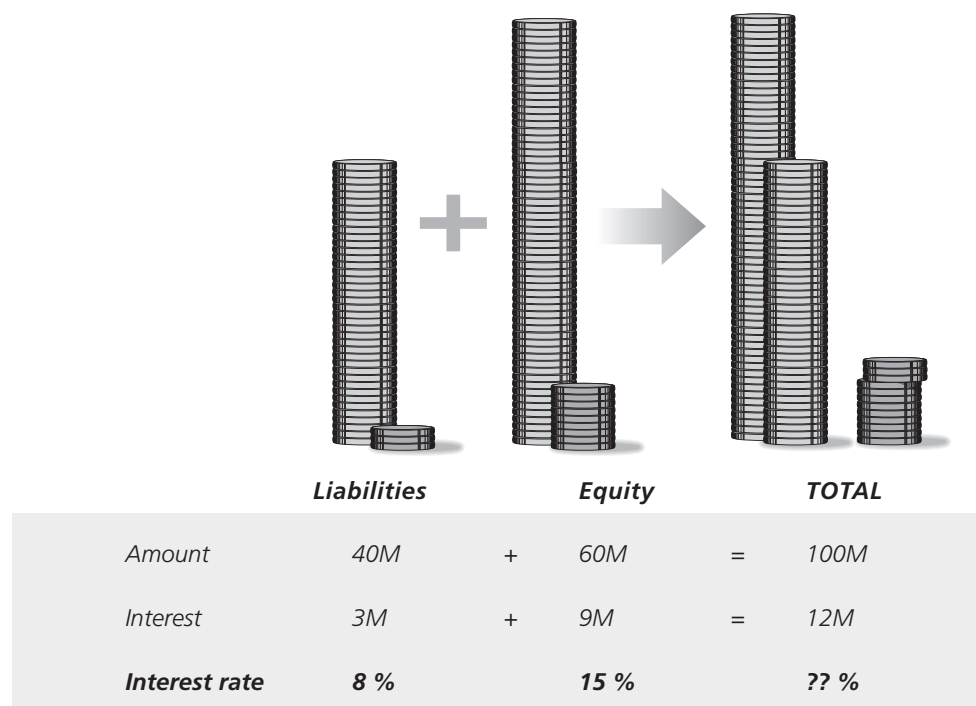
If your return rate is higher than the cost of capital used, you are creating value.

If your return rate is lower than the cost of capital, you are destroying value (or investing for the future).

At least, that is how the shareholders see it, when they decide on which company they are going to invest their money. Often owners expect a portion of the return in cash (dividends). The remaining part stays as an increase in equity.

Weighted Average Cost of Capital

In other words, the trick is to regard the shareholders' expectations as a kind of interest rate. In this example the shareholders expect 15% in return on their money (the equity). The interest rate on liabilities is 8%. What is then the average rate, the average cost of capital?



With these numbers it is easy to calculate the average rate:

12 divided by 100 = 12%.

Performance versus demand

By using the WACC business performance can be related to the cost of the capital that has been used. Like in this example:

Operating profit	20
Cost of capital	- 12
The "true" earning	= 8

You have truly created value!

Today's value of future earnings

Invest today. Harvest tomorrow.

The question is: How much do you need to harvest tomorrow in order to make it worthwhile to invest today?

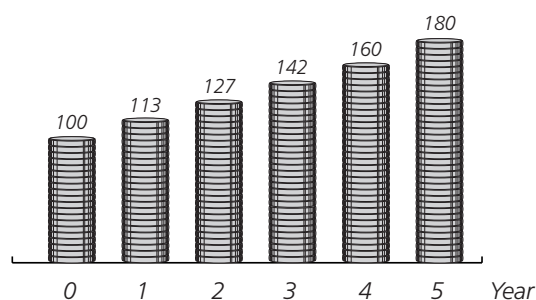
Any investment (in shares, in new plants, in development of new markets, products, etc.) is, or should be, discussed in this perspective.

What about this offer:

"Invest 100 today and you will get 150 back in five years..."

Well, that depends... Let's say that you invest the 100 today. The return rate is 12.5% (weighted average cost of capital) and you let the money stay invested for five years.

The picture shows how your 100 will grow.



Compared to this, the deal you were offered does not seem to be that good (150 in return instead of 180).

Using the table "the other way around", you could say that today's value of 180 in five years is 100 – given a certain interest rate (12.5%).

This is called the **Net Present Value (NPV)** of future cash flow.

Net Present Value (NPV)

Similarly, the net present value of the 150 in five years you were offered is only 83 (at 12.5%), which is much less than the 100 you were asked to invest.

Here is how you calculate it. (Don't spend too much time on the formula, your computer will do the job for you – look for the function NPV.)

$$\begin{array}{lcl} \text{Expected cash flow at the} & & \text{Net Present} \\ \text{end of the fifth year} & \xrightarrow{\quad} & \text{Value (NPV)} \\ & \frac{150}{1.125^5} = 83 & \\ & \xleftarrow{\quad} & \text{Number of years} \end{array}$$

$100\% + 12.5\% \text{ (interest rate)} = 112.5\% = 1.125$

When is an investment worthwhile?

Let's use an example to answer the question.

- You intend to invest 300.
- You expect the cash flow per year to be 100.
- You believe that this will go on for 5 years.

This means that you pay 300 now, and get 500 back, eventually...

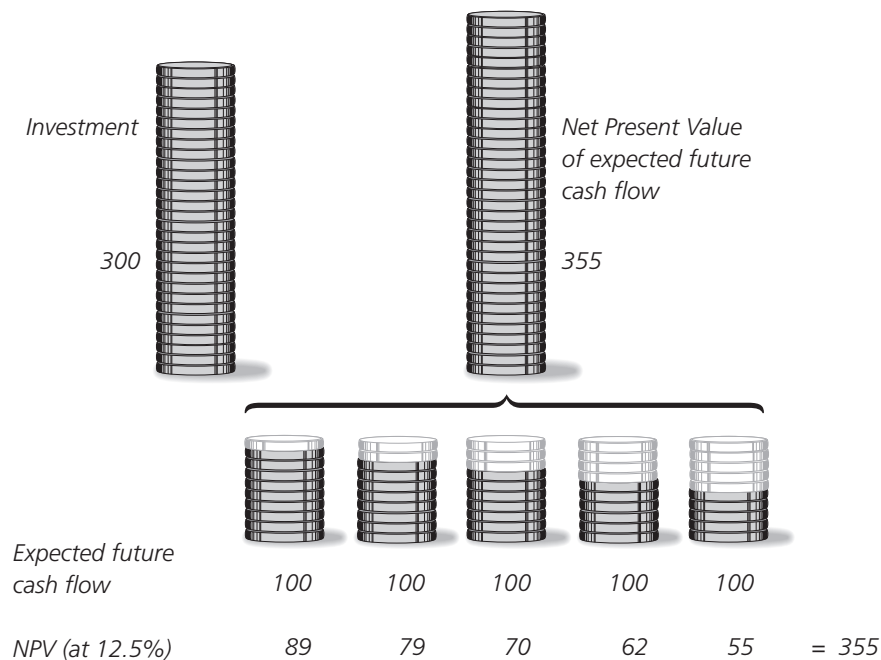
Not bad, or...? Let's see.

You want your 300 back, but you also want a return, say 12.5%.

So this is the question you will ask:

What is today's value of the expected 100 per year in return? For example, the 100 you get the first year has a higher value today than the 100 you will get the fifth year.

As the graph shows you, today's value of the 100 per year in 5 years is 355. And that seems to be good enough and you will probably be allowed to make the investment...



Questions asked

Let's face it:

The net profit that a company reports in its official financial statements is a poor indicator of the company's ability to earn money in the years to come.

In addition to this, the data you get from the financial statements does not always reflect reality, nor do they promote the desired behavior.

Furthermore:

Both business managers and investors are increasingly more dependent on information bearing on the future – and less interested in data from the past.

Value based management

This is why companies are introducing some sort of value based management.

This simply means a stronger focus on the factors that are critical to the business' ability to create value (profit and cash flow) in the future.

Some measures are financial, such as profit, cash flow, shareholder return....

Some measures are non-financial and related to the intangible assets: customer satisfaction, growth rate, innovation, employee satisfaction, brand image, management, culture...

New concepts

For these reasons, a series of new concepts have been developed and applied. The main themes are:

- Adjust the book values to reflect reality and charge the departments for the capital they have actually used... see page 32.
- Focus on future cash flow instead of profit... see page 34.
- Make the intangible values visible so that they can be measured and monitored... see page 36.