3 Financial value creation

3.1 Introduction

3.1.1 While defining the company as a coalition between customers, shareholders and employees it is still necessary to define an expression of success for the system as a whole, i.e. at the level of the company as a whole. This chapter will not only define an expression for the level of success, but will also create a model analysing success based on generic competitive strategies. The financial model can be linked to a more descriptive model of the business processes. The resulting generic strategies can be analysed at different levels of aggregation of economic entities like companies, industries and even economies as a whole.

3.2 Measuring value creation

An adequate way of measuring value creation of companies is measuring the net present value (NPV) of its future free cash flows. This measure provides a balance between short-term performance and long-term continuity and treats the company as a coherent, purposeful going concern, rather than an assembly of assets and liabilities.

3.2.1 There are various different ways of measuring corporate value [i]:

- *Calculation methods for company/shareholder value*
  (net present value of future free cash flows). Assuming that the strategy remains unchanged, this results in the so-called 'current value'. Assuming that they are the best possible value management alternative, they result in 'maximum value';
- *Current market value of shares*
  This is equal to the stock market value;
- *Value of the assets minus liabilities of the company*.
  If the company is a going concern, this value is equal to the 'book value'; if it will be discontinued, it is the 'liquidation value';
- *Break-up value*
  This is the value as perceived by company raiders, asset strippers, etc. It can be seen as the 'market value' of the company (as if it were a tradable commodity).

3.2.2 In the view of Guatri (1994) company value creation automatically means value creation for the investor. This value concept is operationalised in the economic value of equity. Apart from economic value there is the (stock) market value of equity. This market value is, however, heavily influenced by factors that cannot be controlled externally, e.g. efficiency of financial markets, shares supply and demand. Therefore, economic value represents a more internal value of the company.

3.2.3 To calculate economic value, Guatri distinguishes between intrinsic financial methods (e.g. discounted value of future dividends), earnings methods (e.g. discounted 'free' cash flows) and asset methods (e.g. plant, inventory, brands,

licences). In his book the advantages and disadvantages of each of these valuation methods are discussed. To determine value or value creation, he adds, it may be necessary to apply different methods and combine their results through averaging or other means. The most important problem, he states, is that in calculating value there is a trade-off between the requirements of rationality and objectivity. For instance, the asset-based valuation methods generate a very objective valuation, which however is not very rational. In contrast, the discounted free cash flow method is much more rational, but it is impossible to determine the future free cash flows objectively.

3.2.4 Gilchrist (1971) considers company income - i.e. profit - the ultimate measure of effectiveness. In his view, generating company income or profit is value creation. The calculation of value creation takes added value as a starting point:

"Whenever decisions are taken, the acid test of their effectiveness will be whether they have resulted in an improvement of the added value per unit of resource input:

Added Value =
value of sales -/- (value of raw materials + other bought-out purchases)

Value of sales =
cost of external purchases + labour cost + fixed cost + profit

Added Value = labour cost + fixed cost + profit

Profit = Added Value -/- operating expenses"

3.2.5 For our purpose accounting measures such as Earnings Per Share, Return On Investment or Return On Equity have serious shortcomings in measuring value creation. Measurement will be influenced by the use of different accounting methods or different accounting allocations. In this case, the measure of value can be influenced by 'financial engineering' or by portfolio adjustments. Besides, dividend policies and the time value of money are excluded from the analysis

3.2.6 In the eighties scientists such as Alfred Rappaport and Tom Copeland further developed this way of looking at corporate value. While they still thought of shareholder value as their prime objective, they took a giant step forward by taking the net present value of the future free cash-flows as the central measure of value. In other words: the net present value of cash a company would be likely to generate for the shareholders (assuming that all excess cash could be returned to them).

3.2.7 The concept of net present value was introduced already by Ezra Solomon in his book 'The theory of financial management' (Solomon, 1963). He calls this the concept of net present worth. Expressed in a formula:

W (wealth) =
V (net present value of future cash flows) -/- C (capital investment)

3.2.8 Rappaport's (1986) starting point is shareholder value. Economic returns for shareholders, is the total of the value of dividends plus the increase in the company's share price. The foundation for this, however, lies in the value of the firm, which is created by operations.

3.2.9 Rappaport states that shareholder value, i.e. dividends and share-price appreciation, is equal to the value of the forecasted operational cash flows minus cost of capital. This way, by estimating the future cash flows associated with each strategy, management can assess the economic value of alternative strategies to the shareholders. In his view the basic determinant of shareholder value is economic value:

> *Shareholder value =*
> *economic value of the company -/- the market value of the long-term liabilities (> 1 year).*
>
> *Economic value =*
> *the net present value of future cash flows from operations +*
> *discounted residual value after the forecast period +*
> *value of other (non-operational) securities.*

3.2.10 Operational cash flow is determined by value drivers: sales growth rate, operating profit margin, income tax rate, working capital investment, fixed capital investment and duration of the value growth [ii]. The discount rate is determined by the cost of capital.

3.2.11 Economic value creation takes place when:

- the net present value (NPV) is positive, which means that returns on investment are larger than the cost of capital (= the discount measure);
- free cash flow from operations increases;
- the period of value growth (return on investment > cost of capital) extends.

3.2.12 With the NPV measure Rappaport created a fairly universal measure of corporate value, which appears to be a good proxy, according to the results of McKinsey research into the stock market value of many companies (Copeland, Koller and Murrin, 1989; 1990; 1995). Rappaport's measure appears to be applicable for many countries; it has become more and more accepted as a measure of performance and wealth creation within our western society.

3.2.13 When we take all approaches to value calculation into consideration, for our purpose Rappaport's NPV method of calculating future free cash-flows appears to be the most adequate way to calculate the value created and represented by the company. Profits might be distorted by changes in depreciation policy, short-term profit enhancement may jeopardise long-term success and today's profits do not reflect the future investment requirements. Similarly, the balance sheet (and with it, balance-sheet value), does not create an adequate picture of the financial value a company represents as a going concern. Off-balance assets and liabilities will distort the financial accuracy of the picture, but more importantly, key ingredients of future profit potential may not even be represented in the balance sheet. Brand value, know-how and human talent are such items, which might well be better determinants of the real value than are material and financial assets. And finally, the break-up value of a company will not reflect an adequate valuation of the company as a going concern.

3.2.14 For our purpose, Rappaport's NPV method is the most applicable. Being interested in the continuity of value creation from operations, it seems to be the best available expression of the value creating abilities of the company. As stated though, Rappaport's method only reflects the interest of the shareholders. It leaves room for increasing shareholder value at the expense of the other stakeholders. Rappaport's view considers all value created as

shareholders value, that can (and maybe should) be paid out to the shareholders. As we see the company (in advanced economies) as a coalition of stakeholders, we will concentrate only on the value creation part of the Rappaport's argument, not just assuming that all value generated is to be distributed to the shareholders. We include the option that such value is distributed to clients (e.g. by lower prices or higher utility) and/or to employees (higher remuneration, more education, etc). An instrument to meaningfully break down this cash-creating ability from operations will be discussed (Chapters 3.3-3.7).

3.3 Operational value creation

Unless the company is a business trader, portfolio-adjustments, investments and divestments of businesses only yield latent (hidden) cash that has come out of the business processes. The same goes for financial engineering, unless third parties can be made to pay the bill (e.g. governments by way of tax benefits). Hence in the end all potential cash-flows come out of operational value creation; from the business processes which create, produce and sell products and services to the market.

3.3.1 In the late eighties McKinsey & Co [iii] carried out research in 15-20 large American companies as to the prime sources of an increase in corporate value, measured with the Net Present Value method (NPV). When businesses are sold at prices that exceed the actual book value, extra cash surfaces. It appeared that after a period of time 22% of the value increase had its origin in portfolio management, e.g. the buying and selling of complete businesses. Another 14% resulted from financial engineering. This means that only about one third of the total value created had its origin in these two sources. However, 64% of the value increase came from the business unit itself, in other words it came from operational value creation.

3.3.2 If a company, however, continuously creates value by buying and selling businesses in its portfolio, it can only create value on a basis of continuity by adding something to those businesses. For instance, hidden value is made visible (e.g. through asset stripping), business processes or management are improved and/or buyer-seller matching takes place. Actually, such value as is then created forms the deployment of the buyer's specific trading, reorganisation or management skills. In other cases, the company just sells off assets and merely makes hidden value visible.

3.3.3 Reimann (1989) comments on portfolio restructuring as follows:

> "*The value-based approach can help to identify which SBUs are potential value creators or destroyers. By reallocating corporate resources from the 'losers' to 'gainers', the value of the portfolio of the business can be improved quite dramatically."*

3.3.4 This is supported by Clarke and Brennan (1993), who state that (in company acquisitions) ultimately there are only two possible reasons why an acquiring management can extract greater returns to shareholders from the assets of a business than previous incumbents did. Firstly, they may be better managers. Secondly a so-called synergetic effect may occur, by which the merging of two separate businesses realises gains to shareholders. In both cases it concerns with operational business processes, not with financial engineering.

3.3.5 Another important source of apparent value creation is financial engineering. By changing the composition of the balance sheet it is possible to influence the value of the company substantially. Examples of value creation through financial engineering are the so-called techno-lease arrangements that Fokker (the late Dutch Aircraft Company) and Philips made with the Rabobank. Under these arrangements they sold their know-how to the bank and leased it back for use within the company. Since the know-how is not listed on the balance sheet and the bank pays for the know-how, new cash is injected into the company, which adds to the value in terms of cash-flow. In many cases leveraged take-overs in the U.S. have also benefited from this way of creating value. By making hidden assets visible and converting those into real cash, a substantial increase in value was achieved, in terms of visible cash-flow. Here, too, unless a third party (e.g. the government) is footing the bill by injecting cash, no real, new value is created, only hidden value is made visible.

3.3.6 As stated though, over a number of years most of the value creation in these large companies researched by McKinsey originated in the business units and their operations, no matter how sophisticated their portfolio management and financial engineering were. Operational cash flow not only presents 2/3 of the total value created in most companies, it is also the part of the cash-flow, which arises out of interaction with the market for products and services the company provides. Therefore this thesis will only consider the operational part of value creation.

3.4 Three drivers of operational value creation

Rather than the total free cash creation at the operational level, it is the breakdown in three principal components Volume, Efficiency and Differentiation (including their interrelations) which provides an adequate view of the value creation process. The volume component reflects the relative size and relative growth of the market. Various combinations between size and growth reflect primarily the maturity stage of the market: embryonic, emerging, maturing or ageing. Efficiency reflects the relative efforts the company has to make to satisfy market-demands. Differentiation reflects the value (mix) as perceived by the clients, compared with other competitive suppliers.

3.4.1 Let's assume an established and ongoing business that increases the quantity of goods and services it sells to its clients. If everything else remains the same, the cash flow generated by that business would increase. Similarly, at stationary volume and market price levels, we can improve the cost structure of that business and reduce cost, yielding a growth in cash flow. The value created by that business would then increase, because the cash-flow will grow. And thirdly, if we can realise better prices for our goods and services, which is what we call differentiation [iv], the cash-flow will increase, provided volume and efficiency remain at the same level. The incoming cash-flows that create the corporate value, can hence at the operational level be characterised by three elements: volume, efficiency and differentiation (see Figure 3-1).

3.4.2 The most appealing recipe for increasing the operational value of a company would be to increase the volume, improve the efficiency and increase the differentiation level. If these three could be achieved all at the same time, value

growth would be very substantial. In many cases however, this is not possible, because there are some antagonistic links between the three elements.

3.4.3 For example, if in a particular business we were to increase our price level, we would expect the volume to go down because of price elasticity. Therefore, the extra value created through higher prices might be offset completely by the loss of volume. Furthermore, when the volume drops our efficiency will also diminish, which means that we will lose value in volume as well as in efficiency. Therefore a price increase might well cost more value than it creates.

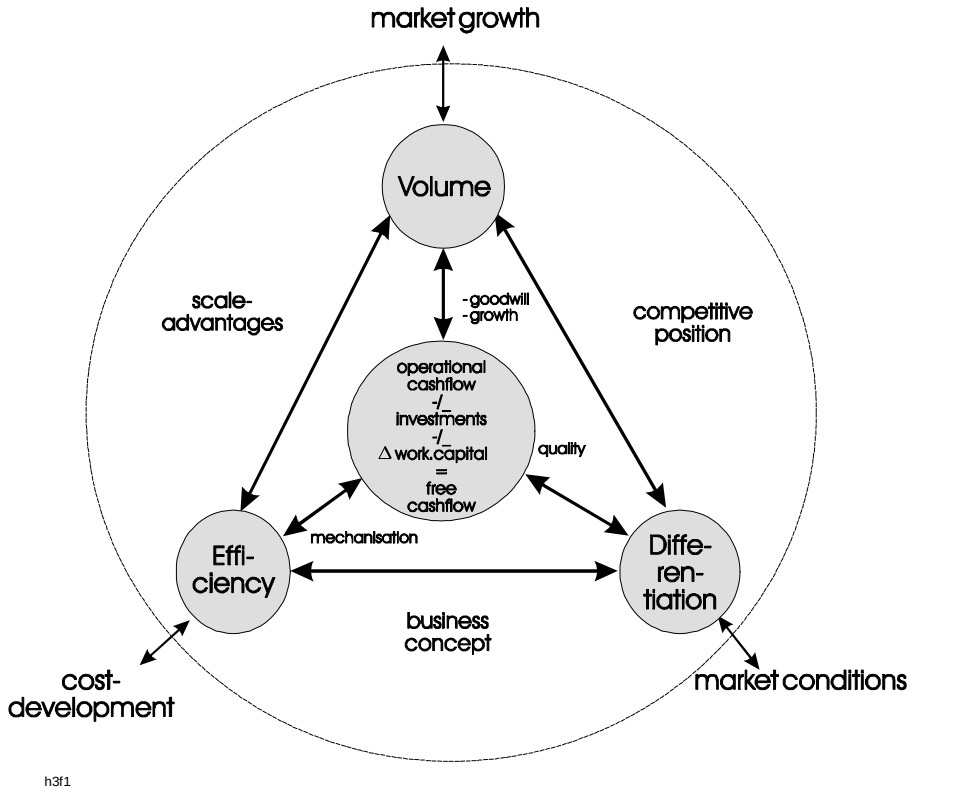

Figure 3-1: Model for measuring value creation

3.4.4 If we were to increase the volume, then under certain conditions in which we benefit from economies of scale, our efficiency might improve together with the volume. However, economies of scale by no means always apply. There are many cases in which it cannot easily be obtained or even not at all. Take for instance a printing business which buys a new printing press in order to get a better economy of scale: that economy is only reached when the new press runs at near full capacity. But as capacity increase is obtained through quantum steps, it might take long before the printing business can actually exploit its economy of scale. Furthermore, because of the purchase the break-even point goes up, fluctuations in market volume may well push the business below break-even and it might not be able to sufficiently compensate that loss in better periods. Consequently, theoretically this printing business may enjoy on paper a dramatic improvement of economies of scale, but in reality it might not be able to exploit it. This is especially true if the volume in the markets in which it operates, is in volatile fluctuation, as happens often in saturated markets.

3.4.5 Another obstacle is that some companies are so big that they no longer benefit from economies of scale; they experience the opposite. A big retail company, selecting cauliflower as its special offer during a certain week, buys quantities of cauliflower that will push up the price as they have to buy over 50% of the produced quantity in that week. In other words, the retail company experiences in this respect negative economies of scale. In other situations, companies in their growth reach a point where the adverse consequences of their complexity and size in terms of management and control outweigh the benefits in terms of primary efficiency in the production process. We will specifically address this later, when we will discuss the effects of heterogeneity on industrial process performance (see Chapter 4.5-4.6). Our conclusion is that economies of scale still exist, but in some cases they do not apply; sometimes the result will be even adverse.

3.4.6 Similarly, the argument of price elasticity that was mentioned in par.3.4.3, does not always apply. A limited number of products, which in many cases are fashionable, display positive price elasticity. This means that if the price goes up, so does the volume. But what is more important, by no means is there always a direct relation between price and volume. If, for instance, we improve the quality of the product or its uniqueness we lay the foundation for a price increase that will not harm volume. Companies such as Intel and Microsoft have clearly displayed that capability over a long period.

3.4.7 Therefore, the relation between quality/uniqueness and price is not just a market factor. It has also to do with the management choices with respect to the uniqueness of his products. Product development and product innovation therefore influence that relation.

3.4.8 On the bottom axis in Figure 3-1, the one between efficiency and differentiation, we find Porter's argument on differentiation versus cost-leadership. Porter's principal statement (1985) was that before companies can decide on product market combinations (the Ansoff paradigm), they have to decide whether they want to compete on price and be a cost leader and, therefore, achieve superior efficiency. The alternative is that they distinguish themselves in the market by servicing the needs of their clients ever closer with better products and services. This, of course, leads to differentiation. Porter states that companies cannot attain both goals in the long run; if they increase differentiation, they will always experience cost penalties and vice versa. Therefore, his basic statement is that differentiation implies less efficiency and efficiency implies less differentiation. This interrelation is known as 'Porter's dilemma'.

3.4.9 In Porter's view, the competitive environment (the five competitive forces) influences prices, quantities sold, costs, investment and the risk factor. Prices, quantities sold and costs, in turn, are determinants of sales growth rate and operating profit margin. This is taken a step further in the concept of competitive advantage: competitive advantage arises from the value a firm is able to create for its buyers that exceeds the firm's cost of creating it. Superior value is created by offering lower prices than competitors for equivalent benefits or from providing unique benefits that more than offset a higher price. Competitive advantage of either type (cost leadership and differentiation) translates into a higher productivity than attained by competitors. The low-cost firm produces a given output using less input, the differentiated firm achieves higher revenues per unit. Porter states that it is difficult, but not impossible to be both lower-cost and more differentiated than competitors.

3.4.10 The problem is that providing unique performance costs more inherently than just being comparable to competitors. Companies can achieve both goals by improving methods or technology. In fact, in many cases successful strategies do exactly what according to Porter is impossible: improving differentiation while reducing cost level. In the long run, however, competitors will follow and force the innovating company to select one type of advantage.

3.4.11 Porter's efficiency/differentiation theory dates already from the early eighties. Because of the struggle with definitions, there have been long-standing arguments whether or not he is true. Widespread criticism has forced him to exclude from his originally strong statement companies that are not at the productivity frontier (Porter, 1996). Evidence is though confusing. Corsten and Will (1993) performed an analysis of relevant literature regarding the validity of Porter's generic strategy assumption. Studies of both Dess and Davis (1984) and Hambrick (1983) confirm that the adherence of generic strategies will result in superior performance. According to Corsten and Will, however, both studies suffer from methodological shortcomings. A second group of studies found that at least some companies can achieve competitive advantages by combining cost leadership and differentiation. Among these are studies by Hall (1980) and White (1986). A third group clearly contradicts Porter's assumption, by reporting that success is causes by the possession of strategic advantages, not by adherence to generic strategies. The authors mention studies by Phillips, Chang and Buzzell (1983), Miller and Friesen (1986), Gaitanides and Westphal (1991) and also MIT's IMVP (Womack, Jones and Roos; 1990) [v]. We believe however, that regardless of the productivity frontier the efficiency/differentiation choice, used properly, is a crucial element in the value creation strategy.

3.4.12 It will be demonstrated that Porter is right in the long run, when these parameters will be quantified (see example 'measuring and monitoring value creation'). In the short run however the ability of companies to stretch the elasticity between efficiency and differentiation is one of their prime vehicles to boost their value creating capabilities. Companies have to decide between differentiation and efficiency, because every differentiation has its price and all efficiency will ultimately mean that a price will be paid in terms of competitive distinction. Especially in saturated markets, as will be argued in this thesis, breaking the adverse relation between efficiency and differentiation will be at the hart of the strategic considerations.

3.4.13 With respect to Figure 3-1 we have so far only paid attention to the incoming components of cash-flow. However, increasing volume requires investments. A company has to pay goodwill in a take-over or it has to pay for expansion of its market outlets and production facilities. And investments have to be deducted from the value created out of volume growth. Furthermore, if a company wants to increase its efficiency and reduce its cost, it can do so in many cases through automation or mechanisation. This requires investments, too. And they have to be deducted from the value created through cost savings in time. Lastly, if a company wishes to improve the quality and performance of its products and services to its clients, it has to invest in product development, product quality and advertising and branding, if it wants to be able to ask a higher price. These investments will have to be paid out of the differentiation value created in the market.

3.4.14 The management though does not control the three parameters (volume, efficiency and differentiation) exclusively. Efficiency, for example, is influenced by external cost development. External pressures on costs (wages, energy, environment, taxes, etc) will negatively influence the financial efficiency of the company. As to volume, it is easier to increase volume in growing markets than in stagnating or even declining markets. Therefore, the rate of growth in markets in which a company operates will influence the ease with which it can enlarge its volume as a major driver for corporate value. And, likewise, it will be more difficult to increase prices in a cut-throat price-fighting market than in an emergent market which has a limited number of suppliers. For that reason the rivalry structure and market conditions play an important role in the price level which a company can obtain. One could divide operational value creation into an endogenous part (controlled by the management) and an exogenous part (caused by the external environment in which the company operates).

3.4.15 As indicated above, it may be highly appealing to choose the combination of higher volume and higher efficiency and higher differentiation as a basis for strategy. In effect, however, companies explicitly or implicitly make a choice in the basic orientation of their value creation. Some companies choose volume as a dominant driver for value creation. They are often expanding organisations with a strong autonomous growth; quite often they operate in growing markets or are able to grow much faster than the market does. That characteristic is reflected in statements such as: 'Our strategy is to grow 25% per year.' With volume as their dominant driver, such companies manage within the context of the aspired volume growth efficiency together with differentiation; consequently in the end volume is reflected in a larger cash-flow.

3.4.16 Other companies select efficiency as their dominant driver of value creation. They are companies whose strategic objective it is to improve productivity with certain percentages, every year. Quite often they compete in stagnating markets, they have to fight other companies over cost and production price, invest in automation and mechanisation and try to maintain volume growth in line with the markets. They try to maintain or increase their market share while keeping their price level competitive and they create their value for the larger part by improving their cost structure.

3.4.17 And lastly there are companies, which put full emphasis on product development and market branding. They introduce new products with a higher added value on the market, either by improving the quality of the product itself or by investing in brand image and brand leadership. Such companies often place emphasis on innovation. Other companies emphasise quality and performance and try to build a broad assortment of products to serve various segments in the markets in which they operate.

3.4.18 Operational value creation, seen is this way, is a rather complex set of interrelations. Not just a continuous confrontation between ambition and environment, but also the interrelations between the three basic components of value creation is rather more complicated that we, at least in the day to day management practice seem to believe.

3.5 Measures for operational cash creation

These 'value creation' drivers can be measured by using 'correlators'. The correlator for volume is the annual sales to the market (turnover), for efficiency it is the ratio between turnover and total employment cost and for differentiation it is the ratio between added value and turnover.

3.5.1 The definitions as described above are not sufficient when it comes to classifying and characterising companies. Over the past 10-15 years we have developed and tested a method with which we are able to characterise in quantitative terms three drivers of operational value creation, from an analysis of a company's financial data.

3.5.2 Differentiation has been defined above as the ability to increase prices in the market, for example by improving products and services. In financial terms we define differentiation as the ratio between the added value created and the turnover generated.

Differentiation (D) = added value (AV) / turnover (V)

3.5.3 This ratio reflects the evolution of the differentiating ability, provided the composition of the value chain remains unchanged. Buzzell views value added / turnover [vi] as a measure for vertical integration. To determine the profitability of vertical integration, this measure needs to be adjusted to exclude influences unrelated to vertical integration under conditions of increasing or decreasing vertical integration. The added value will change as a result of the changing business composition, and will not (necessarily) reflect a change in differentiation level. For example, if goods and services that were originally manufactured by the company are now outsourced to another company, part of the created added value is outsourced with them and might therefore discontinuously change the differentiation indicator.

3.5.4 However, because changes in composition are discontinuous, such events are often fairly easy to detect and correct for. In all other cases, this ratio will increase if our ability to command prices in the market improves and will decrease if we are not able to do so. When looking for a good indicator for the ability to differentiate in financial terms in the market place, it is not the absolute level of this ratio which serves as thus (as this might differ per sector), but the evolution in time of this ratio.

3.5.5 If a company is able to operate at the higher price level, the added value as a proportion of the turnover will increase. This will happen if the prices for current products or services are raised or if new products and services with a higher market value are introduced, provided that that higher added value is not purchased at component level from the supplier. In that case the added value is to attributed to that supplier rather than taken credit for inside the company.

3.5.6 In case suppliers increase their prices and the company cannot pass the price increase on to the market, it reflects a weakness in commanding value from the market. Hence the corresponding drop in differentiation level is a correct reflection of such a situation. Therefore, if we can transfer price increases at input level to price increases at output level, it serves as an indication of our differentiating ability.

3.5.7 Lastly, if we are able to raise prices versus our competitors without changing anything at the supplying end, this will clearly lead to a larger added value of turnover.

3.5.8 When looking at the way the evolution of efficiency can be measured from financial data, it is worth noting that in the vast majority of operating companies we know, a very substantial part of their cost is tied up in employment. Even large, highly automated companies, which operate in commodity businesses (such as bulk chemicals) have a great many employees. These are perhaps not employed in the direct manufacturing processes, since here the labour content has been virtually eliminated. But in other parts of the company (its technostructure, marketing structure and other overhead) the labour content has grown substantially, so as to be able to control, manage and sell in an ever more complex and competitive environment. The total work forces of companies such as Philips, Akzo and Océ are still large, and their cost are multiples of the costs of capital assets depreciation (see Figure 3-2).

3.5.9 Suppose that a company is going to pursue efficiency goals, even if it has a relatively low direct labour content. Inevitably these efficiency goals will also reflect in its total employment. Therefore, if we divide turnover by employment cost, it provides, and proves to be, a neat measure for the overall efficiency evolution of the company:

Efficiency (E) = turnover(V)/ employment cost(EC)

3.5.10 Employment cost in this equation is the total cost of employment in the company, not just its direct labour cost. When higher efficiency levels are pursued, this ratio will go up; when efficiency is lost, the ratio will go down.

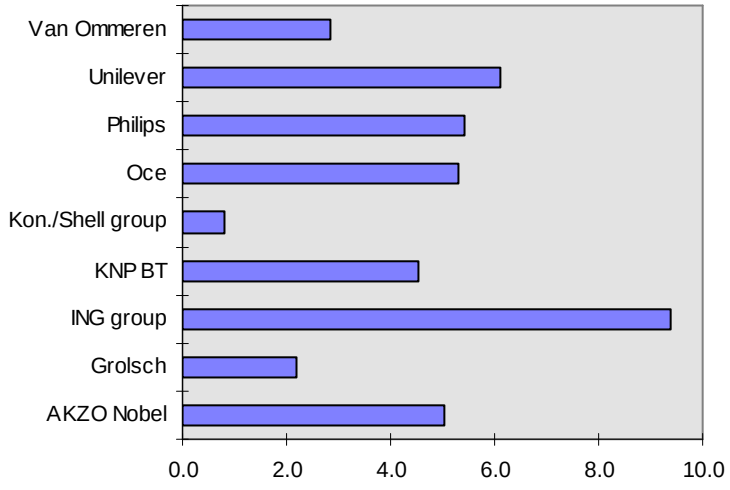

Figure 3-2: Ratio Employment cost/depreciation costs (1996)

3.5.11 Lastly, the turnover provides a good measure to characterise volume developments of a company.

3.5.12 These value indicators are a very powerful tool for assessing the development of strategic value creation from the published financial data.

3.6 Measuring operational value creation

Combining these correlators in the equation: (D-1/E) ∗ V yields the total cash created by the company from its operational activities (before tax, before investments and before non-operational income/expenses).

3.6.1 Differentiation (D) equals added value (AV) divided by turnover (V). Efficiency (E) equals turnover (V) divided by employment cost (EC). Volume is identical to turnover. If we combine these three parameters, then:

(D-1/E) ∗ V = (AV/V - EC/V) ∗ V=AV - EC

Where:

AV = gross profit + depreciation + employment cost

Hence:

(D-1/E) ∗ V = gross profit + depreciation =
operational cash generated (before tax, before investments, before non-operational income/expenses)

3.6.2 (D-1/E)xV determines the cash generated, and therefore the cash creation ability of the company. As stated in Chapter 2, it is especially the creation of cash which determines the continuity of the company as a collaboration of stakeholders. By correcting this cash created for investments required, income tax level and changes in working capital, and discount the future projections with current cost of capital, Rappaport's proxy for the shareholder value of the company is obtained (see par. 3.2.10)

3.7 Value creation performance

The factor D-1/E is the measure of operational value creating performance, as it indicates the amount of cash created per unit of sales.

3.7.1 Achieving higher market prices while improving the efficiency level indicates a strengthening business concept in the network of interactions. This relation is like an elastic band: the stronger the business concept, the more it can be stretched, until (in accordance with Michael Porter) breaking point is reached and choices between differentiation or cost-leadership will have to be made. This relation, expressed by D-1/E, is the value-performance indicator. It proves to be the heart of the value creation of the company; it can be regarded as the company's value engine.

Example

Measuring and monitoring value creation

If we take financial data of companies as a starting point and exclude the non-operating items on the profit and loss accounts and balance sheets, we calculate differentiation by regarding the added value as a percentage of turnover and we calculate the efficiency parameter by looking at turnover over employment cost. We combine the two outcomes into a performance level indicator (see Figure 3-4). Combining the performance level indicator of a given company with the volume, yields the total incoming cash-flow generated by that company.

Both differentiation and efficiency can be shown in a graph (Figure 3-4), in which efficiency is plotted on the horizontal axis and differentiation on the vertical axis. In the graph a line has been drawn for which D-1/E = 0, a hyperbolic function. The line is called the 'break-even' line, on which no cash-flow is generated per unit of volume. On this line the combined differentiation and efficiency generate zero cash-flow per unit of turnover. All companies aiming at continuity, need to be above this break-even line; the distance between their actual position and the line is an indicator of the performance level of value creation.

Competitive pressure causes a force which is orthogonal to the break-even curve, aiming to drive both volume and price-levels down. So, while financial pressures and ambitions will drive companies towards the right upper-hand corner, competitive pressures will drive them towards the bottom left-hand corner. It looks as if companies are caught between almost two magnetic fields at the positive side of the break-even curve. The further they move away from the curve, the higher competitive pressures will become, until the competitive pressure equals the value creating thrust.

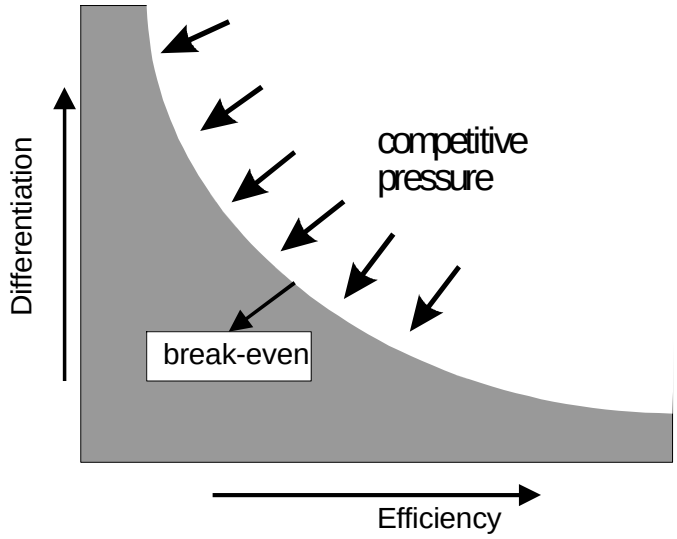

Figure 3-3: Efficiency-differentiation trade-off

The more they move towards the break-even line, the higher the internal financial pressures will become to make them move away from that line. And if Michael Porter is right in stating that differentiation and efficiency cannot be combined in the long run, no companies can end up in the upper right-hand corner, not even after having existed for several hundreds of years.

The efficiency and differentiation value can be combined in the formula D-1/E into a performance level indicator. We can now draw hyperbolic lines of constant cash-flows as iso-cash curves in a graph (see Figure 3-4). Suppose a company is moving from position 1 to position 2; it has increased its turnover, but it has also lost so much performance that the cash flow it has generated is identical to that in situation 1. Should it have moved to position 3 rather than 2, the increase of its turnover would have been larger than the erosion of its performance level; therefore its total value-creating capability would have been enhanced.

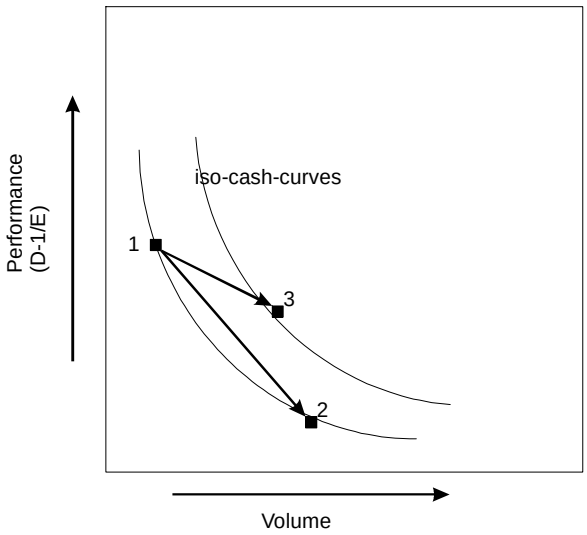

Figure 3-4: Performance-volume trade-off

Companies that dominantly boost their value by volume growth development along a horizontal line, towards the right; they try to maintain their performance level while increasing their turnover. Companies, however, which dominantly develop their efficiency or differentiation level as the strategic development direction, will move vertically upwards. Most companies though will be found somewhere between those two extremes. With this method we can graphically display the strategic behaviour and value-creating behaviour of companies, groups of companies and even total economies in a meaningful way.

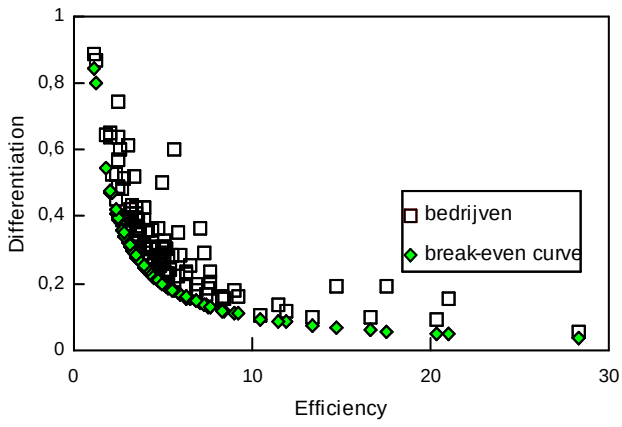

Figure 3-5: Differentiation efficiency index of 101 companies quoted on the Amsterdam stock exchange (1995).

However, more interesting for companies operating in saturated markets is the value performance indicator D-1/E, broken down in its two components. With the use of this method the differentiation and efficiency index of 101 companies quoted on the Amsterdam Stock Exchange in 1995 is displayed (see Figure 3-5). All companies are clearly positioned in a band that stretches along the positive side of the break-even line. Although the distance to the break-even line differs for each company, as a measure for their ability to generate cash from turnover, no single company has ever been able to escape from this band in a significant way. This illustrates the validity of Porter's statement that in the long run no company can simultaneously increase differentiation and efficiency. If that were possible, then at least one of the companies would have ended up in the right hand corner of the graph. In fact, in any case-comparison we have ever made, all companies have ended up in a band close to the break-even curve. The absolute position in this band merely reflects the sort of business in which the company is active labour intensive businesses appear in the left upper hand corner of the graph, while capital intensive businesses tend to be in the bottom right hand corner.

Example

Nedlloyd

An interesting case is Nedlloyd, a large logistics group with world-wide land and sea transport facilities. In the early eighties (see Figure 3-6) due to over-capacity in the market, the company's differentiation dropped and it was very difficult to improve the overall efficiency. All of the volume growth and value generated from that growth was eliminated by a reduction in intrinsic value generating capabilities.

In order to resolve this problem, the chairman at that time, Mr Rootliep, developed a plan geared towards value-added logistics. The combination of a drive towards higher value-added logistics services and an exercise in initial cost-cutting and savings did not fail to produce results and in 1984/1985 the level of value creation performance was substantially higher than in previous years.

Inevitably the cost of differentiation became visible. The differentiation level continued to rise during the period of 1985-1987, but the loss of efficiency was still substantially higher than could be earned back by the higher differentiation level. Because of the resulting effect of a rather stagnant market on the bottom line of the company, an attempt to change the course of the company was made by an aggressive shareholder, Mr Hagen from Norway. This pressure became so strong in the late eighties that it could not be resisted and the value-added logistics strategy had to be abandoned. Consequently, the company had to make an enormous write-off of investments.

Underlying the profit performance of the company, the differentiation level again began to drop, while the efficiency began to improve as a result of a new efficiency orientation. In 1989 the company was back at its 1983 starting point in terms of value creation performance and has since followed the path upon which it originally embarked from 1980 onwards. In other words, the company made a 360o turn in the middle of eighties with consequent investments and write-offs, which eroded part of the company capital.

Going back to our evolution graph, we could say that Mr Rootliep tried to bridge the gap between a capacity-driven company and a mass-individualised company in one step (see par. ?), which proved one bridge too far. Since a new chairman has taken over from Mr Rootliep the company has firmly decided to take the route which involves getting the processes industrialised

and achieving comparative cost parity before again embarking on a differentiation and heterogenisation program.

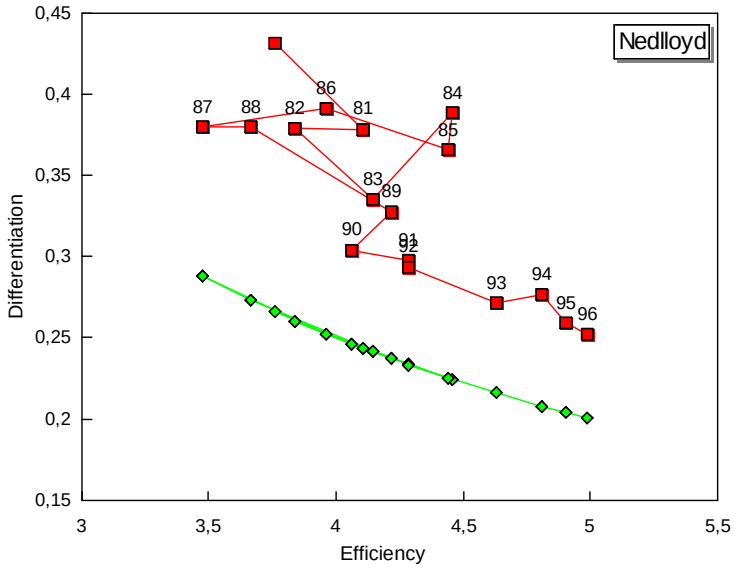

Figure 3-6: D/E graph Nedlloyd

It is almost certain that the scale of the various parts of Nedlloyd will be too small to create global cost parity in an industrial mode. The company has been looking for possibilities of merging with or acquiring similar types of companies (e.g. P&O) to create a sufficiently stable base on which to build a future. It is a pity that the company has lost about six years and most of its capital and self- and market respect in that process, as the failure of the strategy in the eighties could have been predicted quite easily, had the efficiency/ differentiation evolution model been applied.

Example

Philips Electronics

Another clear example of an underlying structural problem from the mismatch between phase of evolution (see paragraph 3.9) and the value creation performance as indicated by the evolution of the efficiency and differentiation, is the Philips Electronics company.

The company, the only non-Japanese survivor in the electronic business, found itself around 1990 in a very bad situation. If we first look at the differentiation versus efficiency graph of Philips (see Figure 3-7) we see remarkably stable erosion of differentiation versus growth in efficiency.

Around 1980 the company was already vulnerable in its value creation and the board of directors decided that substantially higher profit levels had to be achieved to sustain its future. The ensuing evolution focused very strongly on improving the efficiency level of the company as a whole, but failed to maintain its differentiation level in the market. That failing, combined with an almost stagnant volume in the latter half of the eighties, prompted the company to make large des-investments to compensate for the insufficiency in generating cash in the period when Van der Klugt was CEO.

These divestments made the problem of intrinsic value creation all the more apparent.

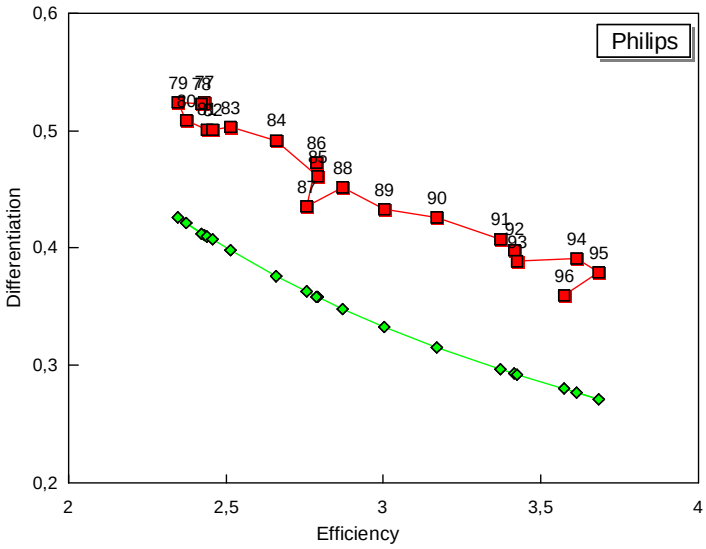

Figure 3-7: Philips D/E graph

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There is a peculiar mismatch between the way Philips generates its value and self-image and the accompanying investment processes. Until now, Philips has looked upon itself as a technologically advanced company, that creates product innovations and leads the electronic branch to a new future, with consequently high investment in research and technology. The Philips research lab has a reputation for breakthroughs in technology, so the cost structure and the self-image of the company is very much that of a technologically-based differentiator. On the other hand, the value creation graphs show that Philips' orientation in value creation is that of an efficiency-driven company.

The crux of the problem is that Philips has the cost structure of a differentiated company and the income structure of an efficiency-oriented company. Philips gets the worst of both worlds (it is 'caught in the middle', in Porter's terms). The large-scale reorganisations introduced by CEO Jan Timmer have reinforced that orientation because the reorganisation program called 'Centurion' at first only created a massive drive towards higher levels of efficiency by laying off large numbers of employees. This created a certain amount of headroom and the company's performance improved, capable of improving its efficiency levels ahead of the erosion of differentiation.

But the question for the future, how the company can manage and develop its differentiation level with these technology investments, does not yet show the beginning of an answer. The problem may not be solvable within the boundaries of an industrial orientation, which is still the company's basic characteristic, as was recently confirmed by the new chairman, Mr. Boonstra. It may well become less and less possible to create meaningful differentiation around products in an industrial sense. A movement toward mass-individualisation, with the corresponding change in underlying processes, may well be necessary for Philips, in order to reach the next stage of evolution.

3.8 Value and business concept

Trivial as it might sound, the ability to increase market prices while improving efficiency and maintaining market share, indicates a strengthening business concept. It is this strengthening of business concept which expresses the utility to all stakeholders simultaneously. Seen in this way the achievement of stakeholder symbiosis in advanced markets is closely related to a strengthening business concept.

3.8.1 In markets where the demand is relatively stable, a growing volume provides insufficient base for growing the value creation. Then especially the relationship between differentiation and efficiency is of interest. The ability to command higher prices, while at the same time reducing cost structures, indicates a strengthening business concept and proves an excellent indicator for the evolution of competitiveness and the 'quality of the business concept'. However, this is only valid if the company can retain its market share. Improvement of the efficiency/differentiation balance while market share is reduced, sooner reflects a withdrawal into the most attractive market segments than an improved attractiveness of the business proposition to all clients

3.8.2 If, while maintaining market share, the differentiation level continues to rise, the company will be able to increase the perceived value of products and services and therefore provide a better value to both shareholders and clients.

3.8.3 A simultaneous improvement of efficiency, however, suggests that such improved performance in the eyes of shareholders and clients goes against the interest of the employees (since labour costs go down). This is not true for advanced companies which operate in increasingly heterogeneous markets. In moving towards higher levels of differentiation, an improvement of efficiency does not reflect a large scale abandoning of direct labour costs (which are already minimal in most cases). It rather (as will be argued in Chapter 4.6) reflects a reduction of complexity costs, creating more dominance and a better development perspective for the employees in the organisation. If as a consequence employment in the company decreases faster than its natural employee turnover, the increased perspective for some employees is matched by an eroding perspective for others. Therefore, continued volume growth, even when some differentiation value potential is sacrificed, is very helpful to increase efficiency while keeping the employment cost level constant. Efficiency then increases, as volume rises while labour costs remain constant. This is one of the reasons why reducing complexity and moving to networked organisations is much easier in times of success and economic growth, when it is easier to realise the necessary growth in volume.

3.8.4 Some authors in recent literature start to recognise this relation between differentiation and efficiency as the key to continued value creation. Mathur & Kenyon (1997), though reasoning from the ambition to make the company more valuable to its owners in the long term (just shareholder value), state that competitive strategy picks profitable offerings or offerings that build value. An offering builds value, i.e. it earns more than its cost of capital, if it simultaneously exploits:

- a favourable market opportunity, by addressing a set of customers willing to pay the price at which the offering can meet the financial objective;
- the company's own distinctive resources, which give it an edge over its competitors;

3.8.5 Favourable market opportunities arise from the way an offering is positioned, either:

- by differentiating the offering, i.e. distancing it from competing substitutes (in the customers' view), so that customers are willing to pay value-building prices, or
- by competing on price, with very little differentiation (if at all) and a highly competitive unit cost.

3.8.6 Still, there recipe is differentiation oriented. Mathur & Kenyon state:

"Differentiation is the key concept of competitive strategy".

3.8.7 The purpose of differentiation is that in their buying decisions customers attach less weight to price. That aim can be achieved by distancing the offering's non-price outputs from those of substitutes, i.e. making those outputs distinctive and valuable to customers. Differentiation is the principle means of positioning an offering in relation to customers and competitors.

3.8.8 Mathur & Kenyon reiterate Porter's original statement that at a strategic level a choice between differentiation and cost leadership is required. Unlike Porter, however, they do not view this choice as almost arbitrary; they strongly emphasise the importance of differentiation as the key concept of competitive strategy. However, both Porter and Mathur & Kenyon accept that differentiation can only be achieved through the sacrifice of cost advantage. In terms of our model of value creation they offer a choice: either the volume/efficiency relationship is exploited 'by exploiting economies of scale and homogeneity', or the volume/differentiation axis is exploited through differentiation, exploiting heterogeneity and improving both product and service quality. Within the limitations of industrial organisation these are indeed the only choices.

3.9 Phases of evolution

Different relations between any two value drivers characterise different phases in the evolution of the business: capacity (craft-economy; volume-growth oriented), product/market (industrial economy; volume-efficiency and volume-differentiation axis) and mass-individualisation [vii] (post-industrial; efficiency-differentiation axis). If the three drivers of value creation are combined with the three levels of business evolution, this creates a 3 x 3-grid which describes the evolution of value-creating structures over time.

3.9.1 Value creation has very distinct patterns. Some companies dominantly increase volume for long periods. Other companies predominantly steer on efficiency, and again others concentrate on shifting their differentiation level. Since the nature of these methods of value creation are rooted in the business processes, and are stable over prolonged periods of time, the characteristics of their business processes must differ as well.

3.9.2 The only structural way to change the magnitude and orientation of the value creation is to change the underlying business processes[viii]: the marketing process, the manufacturing process, the information and know-how processes and/or the organisation or behaviour of the employees. In practice these

changes develop in phases; in each phase the business processes have different characteristics.

3.9.3 The relation between the business processes and the dominant orientation of value creation is shown in Figure 3-8. On the horizontal axis we see volume, efficiency, and differentiation as drivers of value creation. On the vertical axis, a distinction has been made between different kinds of companies with respect to the nature of their business processes: capacity-driven companies at the bottom, product-market-driven companies in the middle and mass-individualised companies at the top.

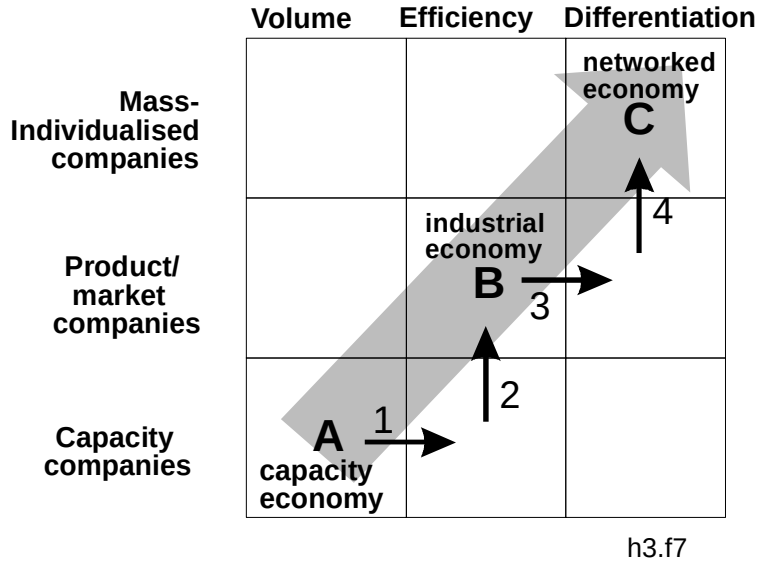

Figure 3-8: Business evolution grid

3.9.4 The simplest companies that we know are capacity companies. These are resource driven companies that merely sell raw materials, expertise or infrastructure capabilities, without adding much to these basic inputs. Examples of capacity companies include oil companies (exploration and trading), the traditional software companies or trucking companies that sell trucking per unit of capacity. Many consulting organisations also fit into this category, as they sell basic skills by the hour or any other unit of time.

3.9.5 The only way for capacity companies to grow in value is by creating higher volumes. They are not particularly efficient (in terms of re-usable know how or assets) or particularly differentiated and they flourish as long as the natural demand in the market place outweighs the supply. For instance, as long as the demand for oil exceeds its supply, oil companies can grow in terms of volume. Also, given Marshall's law of supply and demand, the price level is not a managed quantity, it is the result of an equilibrium, a balance between supply and demand.

3.9.6 Take for example a traditional software company that offers the services of programmers and system analysts to companies for which they develop proprietary software. In the sixties and seventies this was a booming business and some of these company owners became very wealthy: They created an enormous amount of value, as the salaries they paid their programmers differed greatly from the amounts they charged their clients for services rendered by these programmers. Inevitably, as the number of people with programming

skills increased sharply, at some time demand and supply reached an equilibrium and the sellers' market became a buyers' market.

3.9.7 Another example of capacity companies is found in the oil industry. When OPEC in 1973 tried to control supply to raise the price, this led to a reaction in the rest of the world and new oil sources were exploited which counteracted the supply cuts. In general, at some point the sellers' market will inevitably change to a buyers' market and at that moment prices drop dramatically.

3.9.8 Returning to the software company described in paragraph 3.9.6, it suddenly faces a situation (when supply > demand) in which its cost structure, developed in the good times, is no longer compatible with the world in which the company is active. And so the company is forced to cut costs. It might trade its expensive cars in for cheaper ones, reduce overhead and move to cheaper offices; in short, it does everything possible to regain profitability. The volume growth of the past, which in many cases surpassed 10-15% per year, has now dropped to a very low level, because each market player is fighting for a larger market share. In so doing, the software firm ceases to be an archetype capacity company. If we look at Figure 3-8, we see that it shifts from the bottom left-hand corner position to the right and enters the capacity-efficiency mode.

3.9.9 In the process of cost reduction a cost minimum will be reached. In our software company, someone may remember the numerous financial programs that were developed for trading companies and come up with the idea of reselling this software, perhaps slightly modified, to all trading companies in the country, in Europe or indeed in the whole world. At that moment the software, which was originally proprietary-developed, more or less becomes a product. Its core is now re-used and supplied to similar clients in similar situations. So rather than selling its raw capacity (programmers' hours) the company now starts selling the product, which is the final result of that capacity. In communicating to the market it has to make clear and specify what product clients can buy.

3.9.10 This causes a revolution in productivity, because what was developed in the past at very high cost now becomes re-usable. This increases productivity enormously and the company, in terms of its processes, changes from a capacity company to a product-market company. Rather than being 'a jack of all trades' (within the qualitative limits of its resources), it now starts supplying a narrow spectrum of products to a few well-defined market segments. In the history of our industrial economy Ford's first production line for the Model T is one of the best and most clean-cut examples of a shift from the capacity phase to an industrial phase.

3.9.11 In this industrial phase companies will still grow, but in many cases growth is no longer organic, It is acquired growth, as similar companies in the same market are acquired in order to reach sufficient economy of scale. In this product/market business economies of scale mean that larger volumes (in terms of development cost of product, but also in manufacturing cost) will rapidly increase productivity. Therefore a company can gain hugely if it does not only rely on autonomous growth, but also takes over other companies. Since the market is no longer expanding sufficiently to sustain organic growth for all, a heavy shakeout takes place in which smaller players are taken over by the larger ones or simply fail. In the end a few large companies survive whose positions in the product/market segments in which they have chosen to compete, are very strong.

3.9.12 Inevitably, here too, a limit will be reached. Once the products have been fully engineered and optimised, product costs have neared those of its raw material. As all other development and manufacturing costs will now be amortised over a large number of products, their contribution to product cost has become fairly minimal.

3.9.13 An example of this is the silicon (high volume) chip industry, where the chip price has neared the price of (high quality) sand. All development costs, all machinery costs, divided over the very large number of chips manufactured, are now so small that the costs of raw material become dominant. Once a business has grown to sizeable product/market segments and product and manufacturing processes have become fully engineered, the margin for further cost cutting becomes fairly small and the limit to growing value through efficiency is about to be reached.

3.9.14 In the meantime, already during the productivity improvement stage, most companies begin to realise that there is no single market for a single product. There are many product varieties for many market segments, so within one overall market segment there are different needs, which can be grouped in different ways. It has been Igor Ansoff's (1965) contribution to strategic management that he recognised product/market segmentation as one of the basic possibilities for companies to manage their value creation. However, when a company starts making not just one but many versions of a product, inevitably the cost of the product will be higher than that product in its simplest, singular form. This is true at any level of technology.

3.9.15 Although the progress of technology enables a company to create product variations in an ever-cheaper way, it is still more expensive to make 60 versions of a car than just one single version in a single colour. This was true in Henry Ford's time and it is still true nowadays in very sophisticated car manufacturing plants. What technology does enable is the reduction of the marginal costs below the marginal the value that is added to this product by differentiating it in the market place. Clients will pay more for something that fits their particular needs better than the extra cost incurred by the manufacturer. Therefore, differentiation by creating product heterogeneity is a very powerful method in creating value beyond the level of volume and efficiency. In many industries we still find the residuals of a move from capacity to product/market thinking, but in parallel we see almost immediately a shift towards more segmented product/market approaches.

3.9.16 Returning to Figure 3-8 we started at the bottom left-hand side and the first step is a move towards the right, towards the capacity/efficiency column. The next step is a transformation to a product/market company, which is one step up in the efficiency column to product/market and efficiency. From then on an evolution takes place in the direction of differentiation on the product/market level.

3.9.17 Nowadays most advanced industrial companies manufacture and/or supply a wide range of product varieties for ever smaller market segments, because technology enables them to get closer and closer to the needs of their particular clients. However, in many industries this evolution is reaching its limits as well. We will give two examples from which it becomes clear that a company cannot continue creating product variety ad infinitum.

3.9.18 The first example is the insurance business. Until quite recently, insurance companies were commodity-product businesses which all sold basically the

same product to the same market. After a massive investment in streamlining and automating the supply chain (which reflects the efficiency move towards the product/market phase in that industry) insurance suppliers have recently started developing products that were almost tailored to an infinite variety of client needs. However, while investing in higher value-added products they threaten to loose gradually their relation with the market. Some of these products are now so complicated that clients can no longer find out what the various insurance policies offer for their particular situation. Consequently they lose interest. When it comes to insuring their car, their health or their life, insurance brochures may need about 15 pages to explain the difference of these various possibilities to clients.

3.9.19 The industry invests in better, more tailored products, but is meanwhile losing the connection with the market place. While it should obtain a higher price for a better product, the market can/will no longer understand the subtle differences between the various offerings and their implications. Therefore new intermediary companies act as a go-between and they take the added value by sorting out the problem for the client. The providers of the insurance policies are pushed back into cost-cutting and price wars with these intermediaries who absorb the true added value for differentiation. This means that the insurance companies incur the cost of developing and supplying highly differentiated products, while they enjoy the income of a cost-driven business. Consequently most of these insurance companies, especially in damage-insurance's (as a result of the low switching costs) have a hard time finding a profitable way to the future.

3.9.20 Another example is found in the consumer electronics industry. Technology has not only created an avalanche of new products, from video recorders and cd-players to cd-i's and walkmans, but has also been able to produce these items with almost any conceivable functional feature. In an attempt to create higher added value products, functions have been added to this equipment, even to the point that people sometimes find it hard to work out the basic functions.

3.9.21 Some clients (e.g. elderly people) fail to understand how to use their video recorder to simply record a program. Most of the people who own sophisticated audio or video equipment use only a very limited number of all available functions. In many cases they do not even know what additional (and sometimes useful) functions exist. So in an attempt to create equipment which will satisfy even the most exotic individual needs, consumer electronics companies have put all possible features into one box. In doing so they avoid having to make a special version for every individual client.

3.9.22 Such a way of value creation has its consequences. The cost of adding features (even if they are fairly small per function) pushes manufacturing cost up. It requires development and manufacturing effort, making the cost higher than that of a standard product. But as customers no longer perceive the difference, they choose products on price. The end result here, too, is that the cost structure is typical of a differentiation industry, while the income structure typifies a cost-driven industry. This is because clients no longer recognise the attempts of the suppliers to create products which fit their particular purpose.

3.9.23 So there appears to be a growing problem with product/market based differentiation. A problem which will increase if we extend this development in the direction of ever more fragmented markets. There is a natural limit to the ability of customers to recognise product differences and there is also a limit to their effort in understanding these differences. Therefore, we are reaching a situation in which adding features to products might become increasingly

cheaper, but the ability to convert these product features into real added value in terms of price levels achieved in the market will be diminishing. The marginal returns of that evolution become negative. Many industries are currently facing this problem. They are stuck because the volume of the existing markets no longer grows enough. And the reason for that stagnation is not only that in their manufacturing processes they are approaching the minimum manufacturing cost of the product, but also that in the market place they have reached the limit of differentiation in the conventional sense

3.9.24 The logic of reasoning the evolution through the 3 x 3-grid seems to exclude the extreme right-lower hand corner position (capacity/differentiation) as well as the three positions in the top left-hand corner (product-market/volume, mass-individualisation/volume and mass-individualisation/efficiency). In fact, these positions can be taken but they do not match the mainstream development. With respect to the lower-right-hand corner, companies find themselves in the position of capacity-differentiation are niche players and exploit a scarce craft.

3.9.25 In theory one could conceive situations where companies move from capacity to industrial stage, without having to go through the cost-cutting stage under pressure of stagnant market growth first. However, this would imply sufficient vision to change. It would mean starting transformation well before the external need is there, and we know of no company which has taken this course. Phase change seems to be forced upon companies, rather than being voluntarily sought. The same holds true for moving to mass-individualisation before hitting the complexity barrier of the industrial structure. But before exploring this border, let us first take a look at the evolution in process-structure through the steps described so far.

3.10 Evolution and business processes

Such differences in phases of evolution reflect differences in the structure of the underlying business processes: marketing, production, information and organisation. And it is not just the structure which differs in each phase, but also the underlying paradigms.

3.10.1 In value creation phases of evolution can be distinguished. Furthermore, a shift of emphasis in the nature of value creation can only be achieved through changes in the underlying business processes. Therefore it is no surprise that there are fundamental differences in the way business processes are structured and managed in these different phases.

3.10.2 In Figure 3-9 the different evolution phases as described earlier are brought together in a pyramid. At bottom level we find the capacity company. The industrial companies in the middle section are divided into those who are homogeneity-oriented (the volume-efficiency game) and those who are heterogeneity-oriented (the volume-differentiation game). Mass-individualised companies are found at the top of the figure.

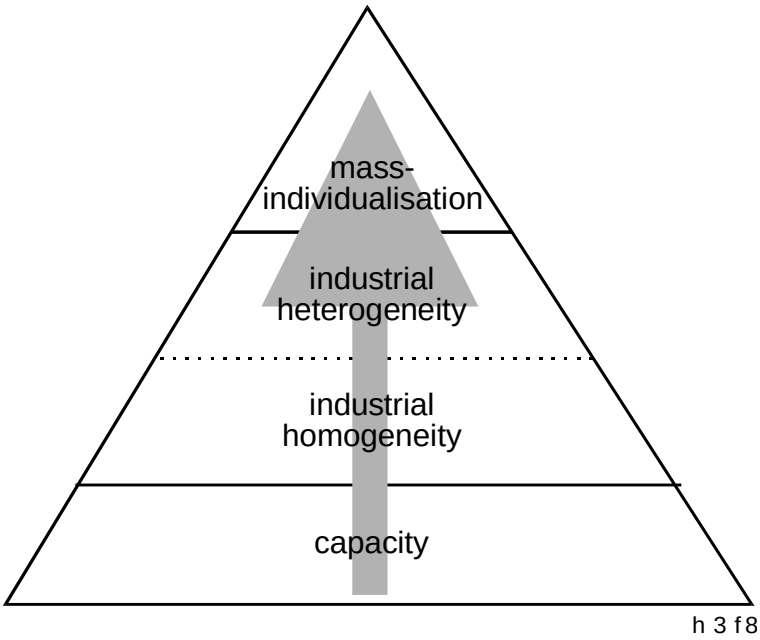

Figure 3-9: Evolution of the business paradigm

3.10.3 As to the stage of evolution of business, Simon (1989) distinguishes between the capacity function and the product function of a company (although he does not present these functions in an evolutionary context). The capacity function is related to performing a task entirely to customer specification. In this case, in fact, capacity is being sold. The product function deals with designing and commercialising products, which are fairly standard. If a customer-specific output is required, the strategic choice will be a company with capacity function. If standard output is required, the strategic choice will be a company with product function. Simon, however, recognises only the two bottom stages of the evolution pyramid, whereas the impact of heterogeneity, as will be shown later (see Chapter 4.4-4.5) will ultimately be incompatible with this rather simple model of strategic function typology.

3.10.4 Bolwijn and Kumpe (1989; 1990) described evolution of large multinationals as a result of appearance of new market demands. Until the 1960s, they state, the market was characterised by quantitative growth. Demand outstripped supply and everything produced could be sold. In the 1960s, the industrial environment quickly changed, showing intensifying competition on price. This made it necessary for companies to pursue efficiency (e.g. through economies of scale). At the end of the 1960's, competition changed again as customers less and less accepted low-quality products. Customers became more critically in selecting products and quality, in addition to price, became an important factor for market success. At the end of the 1970s the competitive struggle changed for the third time. Products were put on the markets at ever-shorter time intervals. Customers, confronted with a broad, often bewildering array of products, reacted by becoming even more fashion-conscious. In addition to price and quality, choice from a wide product-line increasingly became and essential factor for market success, stressing the importance of the flexibility characteristic. The requirement for the 1990s will be that products stand out from those of competitors, or product uniqueness. The corresponding internal characteristics, needed to fulfil that requirement, are innovative ability, or innovativeness. While flexibility is the ability to change quickly, innovativeness means the ability to renew quickly.

3.10.5 Bolwijn and Kumpe are following a similar path of reasoning as we do. They describe this process of evolution as a shift in 'ideal types' of firms: from the efficient firm, through the quality firm and the flexible firm, to the innovative firm, each 'ideal type' possessing its own set of critical characteristics. Each new set of characteristics is an extension of the old one. Companies, able to meet high-quality requirements can be shown, according to Bolwijn and Kumpe, to 'naturally' develop from organisations striving for efficiency. Similarly, flexible organisations spring forth from quality organisations and innovative organisations, form flexible organisations. Yet, they fail to recognise the consequences of accelerated innovation on speeding up the internal processes and the impact on consumer-interaction, nor do they address the consequences of unpredictable heterogeneity. Their view is rather conventional, and oriented towards the distinctiveness of products and services.

3.10.6 Figure 3-10 displays the dominant characteristics of the business processes in the various evolution phases. On the horizontal axis we find the phases as shown in Figure 3-9: capacity; homogeneous, product/market oriented; heterogeneous, product/market oriented; and mass-individualised. On the vertical axis we find the core business processes: marketing and sales, supply, information systems and organisation

3.10.7 The marketing and sales process of a capacity company in its heyday is fairly simple. Since natural demand is larger than supply, marketing and sales may confine to merely broadcasting the message to the world which might use their resources. The market is really a sellers market, which does not require a large marketing and sales effort.

3.10.8 Something similar holds true for the supply chain. A supply chain, if there is any, normally has very little structure or an ad hoc structure. If the organisation is a trading company, its supply chain will have very simple logistic processes. If, for example, it is a consulting firm or an IT-company, it will have a project-oriented structure in which the resources are organised ad hoc on a project basis.

3.10.9 In a capacity company most of the emphasis in terms of knowledge and information is on the craft itself. Consequently, many capacity companies will base many decisions (e.g. on investment) on the development of this craft and the corresponding quality of the infrastructure. Therefore, for a trucking company the quality of the trucks becomes very important. For a printing business, all emphasis will be placed on graphical printing quality rather than a 'fit for purpose' orientation. Projects in the software business which have a reputation for running out of control, pursuing the ultimate programming and IT-sophistication, while in reality client needs had to be serviced. In general, much of the knowledge and information is aimed at the craft itself, not at client needs. And this is quite justified: as long as demand exceeds supply, companies of this kind do not need much more information.

3.10.10 If there are information systems supporting the company at all, they are mostly very basic and of the island type. Because of the simple nature of these processes, capacity companies will often have a very simple structure, almost as the simple structure described by Mintzberg (1983). Some of these companies can though become very big. The benefit that they build up in terms of synergy lies in their access to raw materials and/or resources, and the power they can exercise over the supply side of the business. Sometimes they can create almost exclusivity with respect to the basic craft and skills that they deploy.

3.10.11 At the end of the capacity phase the natural demand for the products falls behind the supply. As soon as the company enters the industrial stage, it must start selling. As it makes only one product or a very small variety of products, it cannot adapt to the market niches once it has decided which product to make. It can only sell. The company will strongly advertise the products to the relevant markets and it will deploy many sales reps that try to sell these products to everyone who might fit the specification of their product. It is a sales-push system, in which the message is oriented towards the function of the product. It is not (necessarily) aimed towards the meaning the product would have for the individual client. This is because in no way the company could adapt its products to the needs of the individual client without destroying its economic viability.

3.10.12 Therefore, an emphasis on functionality and an orientation towards price/performance and product differentiation are the primary components of these companies. These components stress the differences between the company's product - in terms of its function - and the products of competitive suppliers, aimed at as large, homogeneous market segments as possible.

3.10.13 The supply chain is set up to add minimise manufacturing costs in supplying the narrow bandwidth of products the company has decided to make. It is oriented towards mass production, with dedicated production lines (which can only be switched to different products with great difficulty and at great cost), to maintain the absolute minimum cost level.

3.10.14 In terms of knowledge and information product/market companies start gathering more knowledge about markets, but at segment level. They do research in order to determine the functional needs of markets and translate these into a functional definition of product requirements. Homogeneous product/market companies will have their own R&D functions, unlike capacity companies. But because the process is strongly tailored to the products made, the company is divided into executive columns (departments) which take care of different parts of the manufacturing and marketing process. To some degree the marketing department will be separated from the manufacturing department, which in turn will be more or less separated from the manufacturing and logistics departments. Again, these departments will to a degree be separated from the administrative and information departments. So, as to knowledge and information, large islands exist. Each takes care of its own particular role in the process and contains the expertise necessary to fulfil that function to its maximum efficiency.

3.10.15 If all islands are to work together and manufacture and sell products in a predictable way, a large system of procedures and rules is required. The bigger the company becomes, the more these islands become a machine bureaucracies. The synergy is largely arising from economies of scale - the ability to amortise cost of a very large volume of products - and with that achieving a price advantage in the market.

3.10.16 Heterogeneous product/market companies are still industrial companies, but because of their heterogeneity they gradually develop a different orientation. When the product variety becomes very large, it is no longer the function of the product that helps clients identify the company that will supply their needs. Instead it is the image of the supplier, his reliability, which does so.

capacity	industrial homogeneity	industrial heterogeneity	mass-individualisation	
- acquisition/broadcasting - client needs - ad-hoc - skill-oriented	- predictability - simularities between clients - large p/m segments - function	- flexibility - differences between client-groups - refined segmentation - identity	- responsiveness - individuality/ moment - no segmentation - personality	**marketing**
- not structured/projects - pull - non-efficient	- LF batch - push - bulk-efficiency	- HF batch - pull (JIT) - stock reduction	- flow - pull (continuously) - throughput-time	**supply chain**
- absent/craft oriented - administrative - dedicated/stand alone	- dedicated, coupled systems (function) - information-processing - hierarchical architecture - processing-speed	- integrated, proces-oriented systems - information-logistics - local area client server architecture with"traditional" functionality - memory capacity	- "intelligent" user-oriented systems - virtuele information world - local area client server architecture with user-objects - accessability / inter-activity	**information-systems**
- pioneer/ project organ. - rules of the craft - ad-hocracy	- hierarchical / top-down - procedural - dominant technocracy - input-control - change = quantum steps	- multi BU - entrepreneurial - BU management dominance - quantitative output-control - change = incremental steps	- organic - self-organising networks - executive dominance - qualitative output-control - change = evolution	**organisation**

h 3 f 9

Figure 3-10: Characteristics of business processes

3.10.17 In terms of marketing and sales this means that brand identity becomes very important, next to product function. The communication with the market is therefore not just based on product specification but also on brand identity. Since product variety has become very large, the company is now able to serve the particular needs of smaller client groups with much greater precision. An understanding of those client needs is necessary, in order to make sure that the right product is offered to the right group of people. This requires a more interactive marketing process and to this effect account management is introduced in various forms. The marketing and sales system, which used to be wholly push-driven, now becomes interactive.

3.10.18 In order not to lose economies of scale (so as to keep the cost close to homogeneous cost parity), such companies attempt to make the whole variety of products on one integrated manufacturing line. They can only do so if their manufacturing system is flexible, if it can switch quickly between various product varieties. Furthermore, they must make sure that the value created by higher prices through differentiation outweighs the extra costs incurred in the supply chain process. Therefore flexible production automation and just-in-time supply change become very important in order to keep the supply chain manageable and affordable. Nowhere in the production chain will there be large amounts of product gathering dust.

3.10.19 In terms of knowledge and information, market information is required that is considerably more sophisticated. Heterogeneous product/market companies develop ever more detailed market information systems and sophisticated, computerised information networks. Processes are no longer islands of integrated automation such as in homogeneous industrial companies, they are now linked to a much greater extent. For example, marketing information is very closely linked to the product development process. And because of the product variety, closer links develop between product development and the manufacturing process.

3.10.20 The traditional columns gradually cease to be isolated and the companies become very heavily interconnected. This requires different ways of looking at IT systems, an evolution which took place in many companies during the past few years and is still taking place. Inevitably, since these columns were never set up to be closely inter-linked, very complicated interfaces develop between them. By business process redesign the companies, on their way towards a networked organisation, attempt to eliminate these interfaces.

3.10.21 The organisational structure and behaviour of such companies develop into a professional bureaucracy, because a lot of know-how in professional terms is locked up in the various columns. Also, companies become more and more sophisticated in creating competitive advantage through differences in know-how, rather than through the traditional manufacturing process and cost-advantage.

3.10.22 Most companies that enter this heterogeneous mode have achieved a sufficient economy of scale in their previous development phase. Their benefit no longer lies in a further increase in economies of scale, but in the image and position they create in the markets in which they operate. Therefore, market share, visibility to clients and the confidence that clients place in them by recognising the brand time and again, prove of the utmost importance as a basis for their success. The importance of market share is to be found not on the manufacturing side, but in the market position. As early as in the 1960s Ehrenberg (1972) pointed out that the repeat buying frequency of products,

especially consumer products, is directly proportional to the company's market share.

3.10.23 In other words, while companies go from phase to phase, all business processes change, not just in sophistication but also in their very nature. Whereas in the 3 x 3-grid a movement to the right merely indicates an improvement of the existing processes, a vertical shift means a completely new version of such processes. The process foundation themselves change. The diagonal positions in the matrix can be considered archetypes of economic organisations. The companies in positions A, B, and C (Figure 3-8) vary greatly in the way they structure and organise processes They seldom appear in their pure form, but their characteristics are easily recognisable as phases in an evolution chain. It should be remembered that this applies not just to companies, but also to complete sectors of the national economy and even to countries. Within companies it applies to business units as well as to the organisation as a whole.

3.10.24 In management literature a few authors have explicitly dealt with these phase transitions. Next to Simon (see 3.10.3) and Bolwijn & Kumpe (see 3.10.4) which have been mentioned before, Haeckel (1995) describes the change from the 'make-and-sell' model to the 'sense-and-respond' model, which resembles our description of 'industrial' versus 'mass-individualised'. Make-and-sell companies strive for high volume/low cost mass production. They measure effectiveness in terms of efficiency and predictability. All processes can be planned in advance, the slogan is *"Plan your work and work your plan".* This plan-make-sell cycle functions well in comparatively stable environments, where the players change little and the pace of technological change is slow. It will not work, however, in an environment of discontinuous change. In such an environment, the 'sense-and-respond' model should be guiding business processes. It will create a modular, fluid, organic organisation that can respond effectively to dynamic, non-linear change. In most larger firms this implies networks of skills, assets, cross-functional processes, information, and knowledge that are linked to capabilities. In turn, these capabilities are linked to processes for creating responses to customer needs through product and service. His view can be summarised as follows:

Organisational orientation	**Make-and-sell**	**Sense-and-Respond**
Mindset	Products	Service
Know-how	Embedded in Things	Embedded in people and processes
Process	Mass Production	Mass Customisation
Organisational Priority	Efficiency and Predictability	Flexibility and Responsiveness
Profit	Margin and Scale	Return and Scope

3.10.25 Van der Erve (1994) describes this process of change as a paradigm shift:

> *"Traditional Western management has been mechanistic in orientation by an emphasis on the achievement of specific objectives".*

The paradigm in business planning changes along the following lines:

- From quantification and certainty to differentiation and uncertainty
- From reductive to constructive, i.e. from breaking the whole into parts
- to 'getting the whole into the parts'
- From organisation in order to enable tasks to self-organisation in order
- to enable creation
- From fragmentary single-loop learning to continuous double-loop learning.

3.10.26 In his book 'Mass Customisation', Pine (1993) summarises the differences between the mass production and mass customisation paradigms:

Paradigm	Mass Production	Mass Customisation
Focus	Efficiency through stability and control	Variety and customisation through flexibility and quick responsiveness
Goal	Developing, producing, marketing and delivering goods and services at prices low enough for nearly everyone to afford them	Developing, producing, marketing and delivering affordable goods and services with enough variety for nearly everyone to find exactly what they want
Key Features	• Stable demand • Large homogeneous markets • Low-cost, consistent quality, standardised goods and services • Long product development cycles • Long product life cycles	• Fragmented demand • Heterogeneous niches • Low-cost, high-quality, customised goods and services • Short product development cycles • Short product life cycles

3.10.27 Pine also summarises the effects of this paradigm shift from 'Old competition' to 'New competition' on what he calls 'the most influential functions of the modern corporation': production, research and development, marketing and finance/accounting.

3.10.28 All of these authors touch on the problems arising from increased individualisation in consumer behaviour, but tend to formulate the answers within the paradigms of the industrial organisation of processes. However, a more fundamental exploration of the issues is required as will be reasoned in the next chapter.

3.11 Evolution and management sciences

The evolution of management thinking reflects this change in phases through history

3.11.1 It is interesting to see how strategic management thinking has followed the evolution of the objects of strategic thinking in the grid as shown in Figure 3-8. Ansoff was the first to formulate in an explicit, scientific way the importance of product/market choices as a basis for strategy. It was Asoff's thinking that

helped capacity companies define products and the as a basis to achieve sustainable, competitive advantage

3.11.2 If we look at fig 3.11, we see that the Porter dilemma (the choice between cost leadership and differentiation) actually is the choice between the efficiency block and the differentiation block in the product/market line. In spite of many criticism, Porter maintains that on the operational level both efficiency and differentiation can be attained, but eventually on a strategic level a choice has to be made.

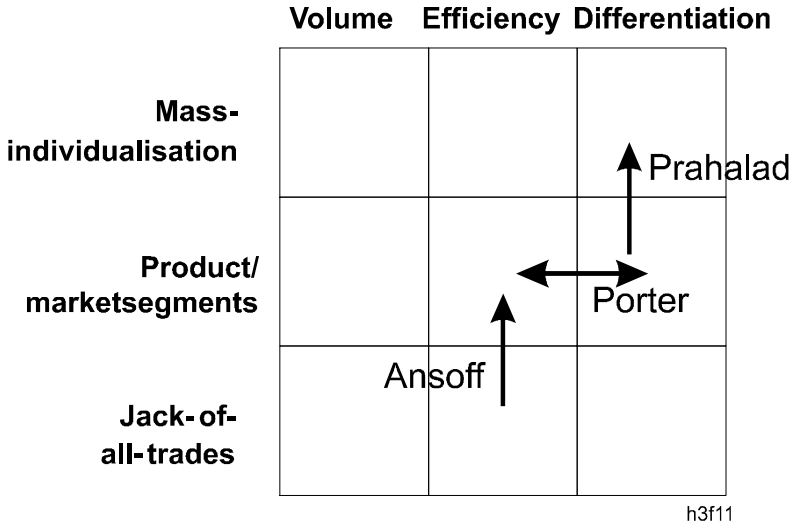

Figure 3-11: Different views match different phases

3.11.3 More recently authors as Prahalad have been moving away from this choice at industrial level towards strategic intent and core competencies. With this they recognised that product/market definitions are perhaps no longer sufficient to help companies towards a successful future, no matter how well they are linked to value creation. In Prahalad's view, the basis of corporate strategy is not the reactive way (looking at competitors or at static markets); it is the company's own intention and strengths, applied to the needs of individual clients. This ability to use the power of limitation (outrageous goals, see Chapter 6.7 and 7.4) to drive the company beyond the known boundaries reflects one of the basic mechanisms in managing networked organisations.

3.11.4 Ansoff and McDonnell (1990) have described the evolution of management sciences in connection with the evolution of the business environment. They distinguish the mass production area, the mass marketing area and the post-industrial area. Mass production developed during the industrial revolution (about 1820 to 1900) and came to replace traditional craft production. Mass production, as the word indicates, is mainly concerned with efficient production of large quantities of goods.

Ansoff and McDonnell:

> *"For the first thirty years of the century [the 20th century], success went to the firm with the lowest price. Products were largely undifferentiated and the ability to produce at the lowest unit cost was the secret to success".*

3.11.5 As early as the 1930's a shift takes place from production to market focus. This area sees the appearance of differentiated products, be it in a very limited way. In fact, this is the area of product/market thinking. This concept, however, was slow to penetrate and became dominant only after World War II.

They continue:

> *"From the mid-1950's accelerating and cumulating events began to change the boundaries, the structure, and the dynamics of the business environment".*

The new era, called the 'age of discontinuity' by Peter Drucker and 'the post-industrial era' by Daniel Bell, has continued to dominate the industrial environment and will most likely do so in the future. This era is characterised by a move from familiar discontinuities - present since the 1950's - to novel discontinuities - which started roughly in the 1980's. While this development was and is widely recognised, business strategists have been slow to adapt. In fact, the strategies used are more or less the same as in the eras before. Or, as they quotes in a popular French saying*: "plus ça change, plus c'est la même chose".*

3.11.6 The above mentioned changes were reflected in the development of management systems. These can be grouped into four distinctive stages of evolution:

- Management by control of performance, which was adequate as long as change was slow. These management systems are characterised by systems, procedures and (financial) control;
- Management by extrapolation, when change accelerated, but the future could still be predicted. Typical tools are operations budgeting, capital budgeting, management by objectives and long range planning;
- Management by anticipation, when discontinuities began to appear, but change, while more rapid, was still slow enough to permit timely anticipation and response. Here, periodic strategic planning and strategic posture management (i.e. the connection between the strategy to be selected and the firm's functional and management capabilities) are considered adequate management tools;
- Management through flexible/rapid response, under conditions in which many significant challenges develop too rapidly to permit timely anticipation. This stage is characterised by contingency planning, strategic issue management, weak signal issue management, and surprise management, all of which allow the company to react almost instantaneously to environmental changes.

3.11.7 Ansoff and McDonnell continue:

> *"As environments became ever more complex and unpredictable, progressive firms developed more subtle, complex, and rapid systems. At the same time, managers in many other firms, as well as some academics, proposed the opposite solution: reduction of complexity [...]".*

An example of the first approach is applying Roy Ashby's 'law of requisite variety', matching the complexity of the firm to the complexity of the environment. This is also the basis for most of the theory, published in recent years about the application of chaos and complexity theory in organisations. An example of the second approach is the 'bounded rationality' approach, advanced by Herbert Simon (1960). It states that individuals, as well as organisations, cannot handle problems when they pass a certain level of complexity. The rationale, supported by Ansoff and McDonnell, is to simplify company strategy as well as the competitive environment, in other words to simplify the strategic position of the firm by exiting from turbulent business areas.

3.11.8 In business literature these different views tend to be mixed up, which leads to unproductive discussions. A recent example is the discussion between Ansoff and Mintzberg [ix] regarding planned strategy versus evolutionary strategy. In the

view developed above, their arguments reflect different strategic contexts rather than incompatible theories.

3.11.9 Our conclusion is that probably all of these authors are essentially right, but their right is limited by the evolution phase of the companies they were looking at, there and then.

3.12 Conclusions

3.12.1 In Chapter 2 it was concluded that in saturated markets companies should increasingly be considered as a coalition of interest, in which core stakeholders create value for all in close co-operation. The process of value creation is an exchange of different energy and rewards between the core stakeholders as agents in a network. In this current chapter, before analysing the process of value creation, an expression of the amount of value is defined. All core stakeholders pursue the maximisation of their utility. As all utility in the end can be expressed in financial terms, and value is created in the operational processes of the company, the net present value of the operational cash flows can be seen as a yardstick in measuring the performance of a company.

3.12.2 More interesting than the volume of operational cash flow is the mechanism underlying the cash-flow creation. Generic strategies of the company can be translated into elements of cash flow creation. Using Michael Porter's model for generic strategies, we found not only found a strong antagonistic relation between generic strategies as efficiency and differentiation but also a strict relation between the incremental cash-flow and the incremental level of efficiency or differentiation. Porters' model was chosen because of its wide acceptance, its fitness for general purpose and the possibility to translate his qualitative theories into cash flow.

3.12.3 Companies generate cash-flow in the interaction between the core stake-holders by specifically organising their business processes. A distinct relation is found between the three generic strategies a company could have (volume-, efficiency- and differentiation-oriented) and the level of maturity of the business. On the level of maturity three phases are distinguished: 'jack of all trades', product-market segmentation and mass-individualisation.

3.12.4 Most companies have started as a 'jack of all trades'. Competition and customer expectations have driven them over time into supplying specified products and services. With increasing heterogeneity and unpredictability ultimately too much efficiency is lost. Mass-individualisation is seen as the next phase where under conditions of fragmented and heterogeneous demand low-cost and high quality customised goods and services can be produced and sold.

3.12.5 The development of the company can in this way be seen as evolutionary steps which are firmly related to the way cash flow is generated: from volume- through efficiency- to differentiation-driven. The strength of this model is not only found in relating business processes to financial value creation. It also provides a good insight on how to position strategists like Ansoff, Porter and Prahalad. Current discussions amongst strategists can be considered as being rooted in a different phase of development, and hence largely complementary, rather than opposing views.

[i] See amongst others Van Doorne and Waalewijn (1992).

[ii] Compare our instrument for measuring operation value creation as presented in paragraph 3.6.

[iii] These data are based on an oral presentation by Tom Copeland in 1991. See also Copeland, Koller and Murrin, 1989; 1990; 1995.

[iv] In this, we must remember that when we talk about differentiation, we use this term purely in a financial sense. Differentiation reflects the ability to command premium prices for goods and services. Providing better products and services to a market, without creating a higher price level (also sometimes called 'differentiation') in management literature, we will refer to as diversification or product/service innovation.

[v] All of these are quoted in: Corsten and Will (1993). They are not referred to in our reference list.

[vi] Defined as: {(sales -/- purchases) / (sales)}*100

[vii] Mass-Inidividualisation is introduced as a term here. It is explained as a concept to address unpredictable heterogeneity in the market in paragraph 10.4. The word 'Mass-Individualisation' expresses the breaking of the paradox of industriality (see 4.4), enabling to serve unpredictable heterogeneity at industrial cost-parity levels: variety at no extra cost (see also Van Asseldonk, 1995; 1996; 1997; TVA, 1995).

[viii] Here an unconventional definition (compared with the management literature on this topic) of business processes is used. Whereas the central argument in this thesis concerns the way order and purpose are achieved in business-processes, we define different core-processes according to the difference in agents and their interrelations. In this way we define:

- the marketing process as the interaction between elements (products/services and needs) and interaction of the company and (potential) individual customers in the market place;
- the supply chain process as the elements (production units) and the interactions in the process of product/service creation and fulfilment;
- the information process as the elements (information and information systems) and their interaction in information logistics processes;
- the organisation process as the elements (people) and the interaction in the human structures.

[ix] This discussion was fought out in volumes 11 and 12 of the Strategic Management Journal (Mintzberg, 1990; 1991; Ansoff, 1991). It started with an extensive critique from Mintzberg on what he calls the 'design school' (= strategic planning). Ansoff, in turn, critiques Mintzberg's critique, immediately followed by Mintzberg's reply under the heading "Learning 1, planning 0". In a comment on this debate, Goold (1992) states that "... the polemics and the prejudices get in the way of moving forward towards a real synthesis."