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**A CORE COMPETENCY APPROACH TO  
VALUING INTANGIBLE ASSETS**

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## **ABSTRACT**

This study was aimed at developing a method for measuring the value of a company's intangible assets in terms of their future earning potential. The resulting instrument makes intangibles more transparent, assesses their strength and measures their value based on future cash flows. Its breakthrough methodology capitalises on the combination of the theories of intellectual capital and core competencies of companies.

The method has been tested in three Dutch companies, and two key conclusions were made.

1. The instrument provides vital management information about the company's strategic assets. Since the management of the pilot companies felt this information was highly confidential and should not be made public, three ratios were developed for external reporting:
  - the Knowledge Intensity Indicator
  - the Potential Indicator
  - the Balance sheet Indicator

These can be further developed into benchmarks, which enable a comparison between companies.

2. The value of intangible assets cannot and should never be determined with full objectivity, since the value of intangible assets is a direct result of a company's ability to find value-adding applications.

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## 1. INTRODUCTION

### 1.1 Ambition

*“The transition to the knowledge economy can be described, without exaggeration, as a revolution. Companies that, until recently, were involved in conventional industrial activities have now become high-quality providers of knowledge-intensive products and services. What’s more, in the rapidly increasing complexity of the economic environment, it is knowledge workers that make the difference between success and failure.”<sup>1</sup>*

1. This new economy is largely driven by intangibles such as knowledge, image, and relationships; thus for economic transactions it is desirable that companies can provide a reliable insight into their “intangible strength”. Conventional financial statements and internal management reports often provide too little information on the factors that really contribute to a company’s success. The conventional book-value is often far removed from a company’s true value.

‘We win because we hire the smartest people.’

Bill Gates

2. The debate on making intangible assets transparent has been going on for decades. Each decade seems to concentrate on its own particular theme. In the 1970s, the focus lay on people and Human Resource Accounting became popular. The 1980s brought experiments with sale-and-lease-back constructions for patents and copyrights. During the 1990s, attention shifted to knowledge and with it the emergence of the Intellectual Capital school of thought. Companies such as Skandia, KEMA and Buckman Laboratories are experimenting with this to design ways of making knowledge transparent.

3. In each decade, there has been both a progressive and a conservative school of thought. The progressive school generates new ideas on how to address this old problem; the conservative school points out the risk of disclosing figures that are often difficult to determine and confirm objectively. In their drive to make the unmeasurable measurable, the progressive school sometimes produces figures that can stand the test of objectivity, but provide little in the way of relevant insights.

4. In a new economy, in which the key factors are complexity, intangibility, and dynamics, managers need new management tools and stakeholders need other measuring methods to form a clear view of companies’ true economic potential. The tools must provide transparency about the quality and value of intangible assets and their potential for the future.

### 1.2 The result

5. Experiments have been conducted with a newly developed method that provides an insight into ownership of intangible assets such as the knowledge, image, and relationships in three separate companies. The method provides an insight into the management of these assets and their future potential. Information on the availability, management, and potential of a company’s intangible assets provides managers with a tool for continuity and qualitative growth.

6. The result is greater management understanding of the extent to which the company’s existing intangible assets are “fit for the future”. The method presents this in the form of a management agenda for strategic issues, a quantitative review with information on the quality of the assets, and a calculation of the value of these assets.

7. The company can also use this information in its external reports to provide an insight into its true economic potential and to show that it is managing its intangible assets with care. Each of the three companies taking part, however, showed considerable reluctance to disclosing such information, as it touches on the core of a company's strategy and exposes strengths and weaknesses.

### 1.3 The companies

9. The method was applied in three medium-sized companies with between 200 and 600 employees. One company is active in the electrical engineering industry, one in the transport world, and one is a financial institution. In the interests of confidentiality, they are referred to here as Electro Ltd, Transport Ltd, and Bank Ltd. A feature of all three companies is that they are fairly knowledge-intensive, with a large number of graduate employees. They are all service-providers to a greater or lesser extent. Electro Ltd and Transport Ltd also supply goods.

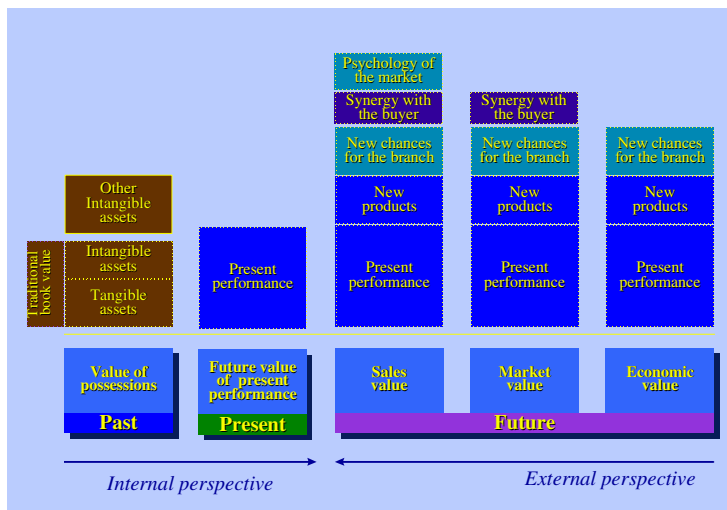
10. One of the three companies which took part in the study was ultimately unable to provide all the information required. No final results are therefore reported for this company, but the experience gained with it is included here. The main lessons from this pilot study are: Full commitment of the company's senior management is necessary for successful application of the method.

11. When the method is applied for the first time it demands a lot of time from management. In turbulent times, this is not always available. Not every manager can apply the key concept of the method - "core competencies" - directly to his or her own company.

## 2. THE VALUE OF INTANGIBLE ASSETS

### 2.1 The value

11. Many recent articles and books on Intellectual Capital refer to the large difference between a company's conventional balance sheet value (the book value) and its market value. This difference is regularly attributed not only to inflation and depreciation but also to the value of intangible assets such as knowledge. This is only true to a certain degree. The value of companies can actually be addressed in two different ways: from the inside out, and from the outside in.



12. The internal perspective looks at the value of the assets as it has been built up in the past. From this point of view, the difference between the market value and the book value will be due primarily to assets that are not currently included in the conventional balance sheet total, such as knowledge, relationships, and image. From this perspective, the value of these non-valued assets, like that of those that are valued, will not be dependent on the future.

13. The external perspective looks mainly at the future and estimates the future potential of a company. From this point of view, the difference between the market value and the book value will be due primarily to the company's future opportunities and these are not valued in the conventional balance sheet. The expected earnings from existing and future products and services, as well as, for example, the new opportunities afforded by the sector, play a key role here. Market psychology and the economic cycle also play a role in the realisation of a company's market value; when a take-over is being considered, the synergy effects for the acquiring party can have a dominant effect on the price attached to a company.

14. There are many different explanations for the gap between book value and market value. One claims that it is due to knowledge (Buckman Laboratories), while another attributes it to the brand (Coca-Cola) or the ownership of a standard (Microsoft). However, the perspective chosen is important: the external perspective, a forward-looking point of view in which an assessment of the company's environment and sector plays a key role, or the internal perspective, which focuses on the past and on non-valued assets.

15. This difference in perspective with regard to the value of companies is important in the determination of the value of intangible assets. Here, too, the two different perspectives can be applied. From the internal point of view, the value of intangible assets can be determined by looking at the replacement value or the market value. From the external point of view, the value can be determined by looking at the economic value and future potential.

16. Which perspective is the most relevant for determining a company's value? If you own the proverbial goose that lays golden eggs, then from the internal perspective, the value of the goose is equal to the historical costs (the costs incurred to hatch and raise the goose) or the market value (which depends heavily on whether the buyer knows that the goose lays golden eggs). From the external perspective, the value is equal to the earnings from the golden eggs that the goose will lay during its lifetime - in other words, the future cash flow and the chances that this will remain in tact. Naturally, it is this latter value that counts. For this reason, the method developed by KPMG focuses on valuing the future economic potential of the intangible assets.

USD 8,000,000,000 for an access port<sup>2</sup>

Yahoo! - with obligatory exclamation mark - is an Internet search engine. In 1994, two young American technicians started up a search guide for the Internet, which, at the time, had not yet really taken off. They turned their hobby into their job and four years later (August 1998), their company was worth USD 8 billion on the NASDAQ stock exchange – even though the company has never yet shown an operating profit in its books! Nor does it provide any tangible products. Stock market analysts attach value to the unprecedented advertising income that a successful gateway to the Internet can generate in the very near future. No other medium can be seen by 95 million pairs of eyes each day (as of March 1998). Yahoo!'s core activity is providing customers with a high-quality service when searching for information, on-line buying, or electronic communication. Acquiring a share in the most important access port to this booming market is worth a great deal to financiers.

## 2.2 The intangible assets



17. Many “assets” contribute to the results and success of a company. The tangible ones are known, while the intangibles are often hidden. To expose these hidden assets, we use a model KPMG developed in consulting clients in the field of core competencies. This makes a distinction between knowledge (implicit and explicit), culture, processes, and possessions and legacies such as image, networks, and customer relationships.

18. The importance of these assets for the success of a company is growing all the time. It is therefore becoming increasingly important to provide more insight into their quality, scale, and possible value for the company. This is relevant in order to improve

internal management and external accountability, and to attract borrowed capital. These three different motives make different demands on the insight provided.

### 2.3 Internal management

19. The purpose of internal reports is to provide information for decision-making processes within the organisation. It is extremely important for management to obtain an insight into the extent to which value is added and the degree to which the value creation process is controlled. “What gets measured, gets managed.” The increasing importance of intangible production factors has led to a growing focus on non-financial performance indicators.

20. This trend in internal reporting has been evident for some years. Companies increasingly apply strategic (key) indicators to management operations. These Intellectual Capital frameworks help us identify the value-creation patterns. A company’s management is free to design the internal reporting process as it sees fit. This has often led to highly company-specific indicators. The applicability of these indicators therefore decreases as soon as they are divorced from the company or the sector.

### 2.4 External accounting

21. The purpose of external reporting is to justify the policy pursued and to provide information to third parties for decision-making processes concerning the organisation. External reporting is on the one hand dominated by uncertainty or lack of knowledge on the part of the providers concerning the true information requirements of interested outsiders and on the other by a multitude of different interests in the acquisition or non-disclosure of information.<sup>3</sup>

22. The financial markets and the shareholders expect the company to provide an insight into the company’s profitability and expected performance. The labour market expects an insight into its personnel policy and career opportunities. The consumer market, however, expects information on the quality of the product and the reliability of the producer. Consumers seem sensitive to incidents with the product and how the company deals with these.

23. There is growing criticism about the extent to which conventional financial statements provide for this diversity of needs. Social and environmental annual reports are a reaction to this. The financial information says less and less about a company’s true value and future performance. And so a need has arisen for information on the effective management of a company’s intangible assets.

“The figures in an annual report say something about the past, but nothing about the future. It’s like sitting back to front on a horse: what you see already lies far behind you. You don’t know where the horse is going because you have your back to it. Maybe it’s heading for disaster ...”

P. Fentener van Vlissingen<sup>4</sup>

24. It is difficult to say whether there is a genuine need for greater insight into intangible assets in external reporting. This requires, for each individual company, more insight into the decision-making processes of all its groups of users. The decision-making for which externally available information is used is multi-purpose, and usually unorganised. A company cannot, therefore, provide valuable information to every single user groups.

## 2.5 Corporate financing

25. A third reason for providing more insight into intangible assets is to provide external financiers with a better picture of a company's true value, profitability, and potential. When investing in a company, financiers need to take into account a company's continuity, the real expected future earnings, and the risks it will take with the borrowed capital. The quality of the management is a key issue here. Is the management experienced, does it understand the risks and opportunities and can it deal with the turbulence of the market? This will be revealed by, among other things, the demands that can be made on a good business plan.

### *Five years of uninterrupted golfing pleasure<sup>5</sup>*

Maarten Lafeber, a young Dutch golfer at the start of a promising golfing career, put his professional career on track for the next five years thanks to a remarkable financing deal. Depending on their investment, investors receive a large or small share in Future Golf, a private limited liability company into which Lafeber deposits all his golfing earnings. If he succeeds in earning more than his costs, investors can count on a maximum of 50% share price profit and 5% dividend per year. Future Golf has issued more than 7,500 depository receipts for shares, bringing the total amount of subscriptions to far more than the NLG 750,000 needed.

### *12 personal questions that every business plan should answer<sup>6</sup>*

- Where was the management trained?
- Where did the managers work, and for whom?
- What have they achieved, professionally and personally, in the past?
- What is their reputation in the business community?
- What experience do they have that is directly relevant to the market opportunities?
- What knowledge and skills do they have?
- How realistic are they about the chances of success and the risks that will be taken?
- Who else must join the team?
- Are they prepared to recruit talented employees?
- Do they have the resoluteness to make the inevitably difficult choices?
- How committed are they to the company?
- What is their motivation?

### 3. THE METHOD

#### 3.1 The objective

26. When applying the method developed by KPMG, the aim is to encourage management to think about the company's strength and the strategic options for the future. Management is presented with a "mirror" that reflects the quality of the company's intangible assets. This can lead to measures to manage certain intangible assets more effectively, and to adjust the company's strategy.

27. The result of applying the method will generally contain information that is sensitive in terms of competition. Companies are therefore unlikely to wish to publicise these results. It should be possible, however, to provide a qualitative report on the company's strength and then to show movements in its value over the years with the aid of an index. Ratios could also be published (for example, the ratio of the value of intangible assets to that of the fixed assets), which will allow comparisons between companies. These ratios, as with all new ratios introduced in the market, will only gain significance over a number of years.

28. It is not the objective of the method to allow external interested parties to determine the company's market value. Because of the amount of data that the company would have to provide, the method is not suitable for this purpose. What it can do is provide the selling party with an insight into the intangible factors that contribute to the market value in the event of mergers or acquisitions. The method could therefore play a role in due diligence inquiries.

#### 3.2 The steps

29. When the method is applied, a company must take four steps. The first step is to define the intangible assets by determining the company's core competencies. Each core competence is a combination of intangible assets such as knowledge and skills, standards and values, explicit know-how and technology, management processes and assets and endowments such as image, relationships, and networks.

##### *Puzzled & Son*

The results of the method developed by KPMG will be illustrated in this section on the basis of the (fictional) company Puzzled & Son. This family business, owned by William Puzzled and his son-in-law Ted Hofmann, produces jigsaws, puzzle books, games and other toys, and is slowly making the switch to computer games. It has 270 employees, mainly working in the printing unit and the design departments. In 1997, it realised a profit of \$ 10 million on a turnover of \$ 90 million.

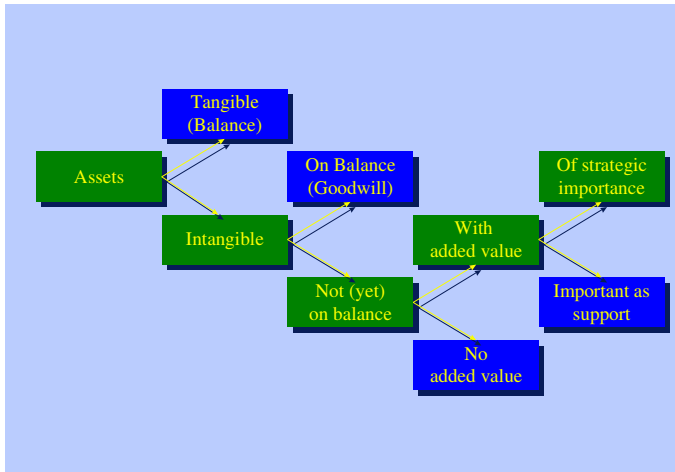
30. The second step is to estimate the strength of each of these core competencies with the aid of a checklist. In order to determine the value of each core competence, value drivers are then calculated in step three. These jointly determine the value. The value of each core competence can then be determined. The total value of all strategically important intangible assets can be determined by adding up all the core competencies.

31. All the data collected in steps one to three are analysed in step four, in order to complete the "dashboard" and create a management agenda for intangible assets. This is presented in an internal management report, together with notes and recommendations. The way in which the results should be reported externally is agreed with the management. At the same time, an appendix to the annual report is drawn up.

#### 3.3 Step 1: identify core competencies

32. When developing a method to define the "true economic potential" of a company, it is not appropriate simply to list all the intangible assets that are not at present included in the conventional balance sheet valuation.

33. The demand for relevance means that the method must be able to distinguish between relevant and non-relevant intangible assets. The relevant assets are those that provide substantial added value to the company in question, and that are of *strategic* importance.



34. Intangible assets such as image or culture do not have a separate value. They provide added value for the company only in combination with each other. Transport BV proved to have a highly customer-oriented culture. This is only of real value for the company in combination with its ability to solve technical problems and to operate very quickly and flexibly. The result is an unprecedented customer service that genuinely provides customers with added value.

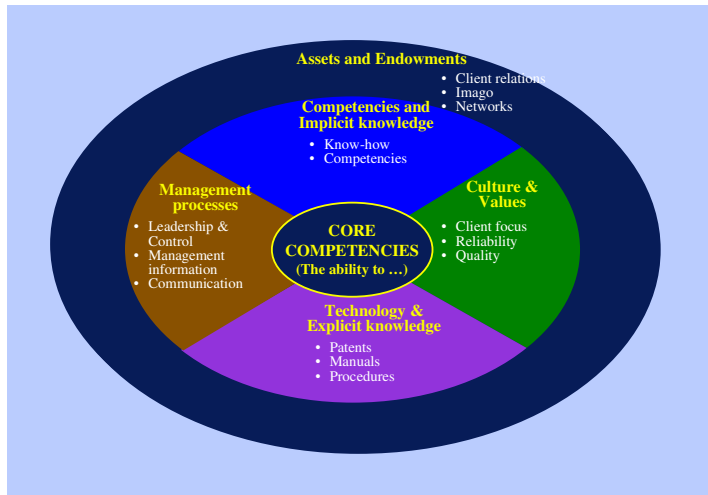
35. In order to identify the interrelationships between strategically important intangible assets, a link has been made with the company's core competencies. Hamel and Prahalad's theory of core competencies states that the real future of a company lies not in the products or services that it provides, nor its market share, but in the optimal utilisation and maintenance of unique skills: core competencies. This concept has become important in the past five years and enables companies to define themselves, their markets, and their added value in a new way, which leads to many new and often unexpected opportunities.

36. Close analysis of many core competencies shows that they almost always consist of a combination of intangible assets, such as certain knowledge and skills, which flourish in a particular culture. Where tangible assets play a role in core competencies, these are often buildings, such as an office network. Such property then makes a contribution to the core competencies, but does not constitute an essential part of them.

37. The core competencies are determined by a combination of various techniques. Examination of customer needs and requirements reveals a picture showing what distinguishes the company from others in its field. An analysis of existing products, intangible assets, and the economic engine (how does the company earn its money) gives a picture of what the company can do. The combination of reasoning from the outside in and from the inside out generates hypotheses for the core competencies.

*Three examples of core competencies from the pilot studies:*

- Bank BV: The ability to generate customer loyalty by providing customised solutions on a highly personalised basis, in which professionalism, independence, service-provision, and clarity play a key role.
- Transport BV: The ability to operate effectively and to be financially independent.
- Electro BV: The ability to design electrical energy conversion systems by applying state-of-the-art technologies which enable customers to convert electrical energy far more simply.



38. A core competence must always be defined in terms of “the ability to ...”. The result of Step 1 is a definition of the company’s core competencies, each explained in terms of the intangible assets of which they consist, namely:

- Skills and implicit knowledge
- Culture and values
- Technology and explicit knowledge
- Management processes
- Assets and endowments such as image, customer relationships, and networks.

### 3.4 Step 2: determine the strength

40. There are five criteria to determine whether a competence is really a core competence. A core competence must provide a clear benefit for customers; the company must be demonstrably better at it than its competitors; the competence must offer potential for new products and services in the future; it must be difficult to imitate; and it must be firmly embedded in the company.

41. According to Gary Hamel, one of the founders of the core competence theory, a competence either meets these criteria or it does not. In the method developed by KPMG, the criteria are not applied as black-and-white standards, but as a five-stage continuum on which a competence can score. On the basis of these criteria, we developed five tests that provide an insight into the strength of the competencies. We determine the strength of each core competence with the aid of a checklist providing a score on a scale from 0-5 (see Table 1).

Table 1 Testing a core competence strengths and weaknesses

<i>Criterion</i>	<i>Indicator</i>	<i>Checklist</i>
Customer benefit	Added value	Added value test
Better than competition	Competitive advantage	Competitiveness test
Future potential	Potential	Potential test
Difficult to imitate	Sustainability	Sustainability test
Solidly embedded	Robustness	Robustness test

The answers are given on the basis of information gathered, such as annual reports, market analyses, customer satisfaction surveys, etc.

#### *Added Value test*

42. First, a score is given for the added value that the core competence offers the customer. Questions asked in this respect concern the extent to which the customer appreciates the benefit. A customer satisfaction survey provides additional material to support the score.

#### *Competitiveness test*

43. The competitiveness score of the core competence is determined by asking questions relating to the level of competition that the company faces in this field and to what extent it has an advantage in this respect. In order to verify the answers to these questions, a competition and/or market analysis must be performed.

*Potential Test*

44. To determine the score for potential, questions are asked with regard to whether demand for products/services that can be provided as a result of the core competence is rising or falling, and whether the core competence enables the introduction of new products and/or services. It is also important to know whether threats exist that could reduce the applicability of the core competence and if so which ones.

45. Analyses of the life cycle of the products and/or services to which the core competence contributed in the past could provide an indication of the life cycles of existing and future products and/or services. Whether the trends revealed can be followed in the future, however, must be determined by means of a market analysis.

*Sustainability test*

46. The questions asked in order to determine a sustainability score relate to whether the company can retain its advantage with the core competence. This depends on whether elements of the core competence already exist in the sector and the relative ease with which competitors can develop or acquire the core competence. The difference with the competition score is that the sustainability score shows the number of years for which the current lead on the competition (competition score) can be retained.

47. Once again, a market analysis will provide useful background information for the determination of this score, to support the responses. Additional information must be gathered, showing which investments, in terms of time and money, the development of the core competence required.

*Robustness test*

48. Finally, the robustness score is determined. Questions asked here are designed to provide an insight into the robustness of the human component (skills, implicit knowledge, and culture), the organisational component (management processes and explicit knowledge and skills) and the assets and endowments (image, customer relationships and networks).

49. Additional evidence is provided here by documents on personnel policy and by measurements of staff turnover and employee loyalty. Manuals showing that relevant know-how has been made explicit, or that the company is prepared for disasters that threaten relevant systems, are valuable in this context.

*Example of strength of Puzzled & Son's core competencies:*

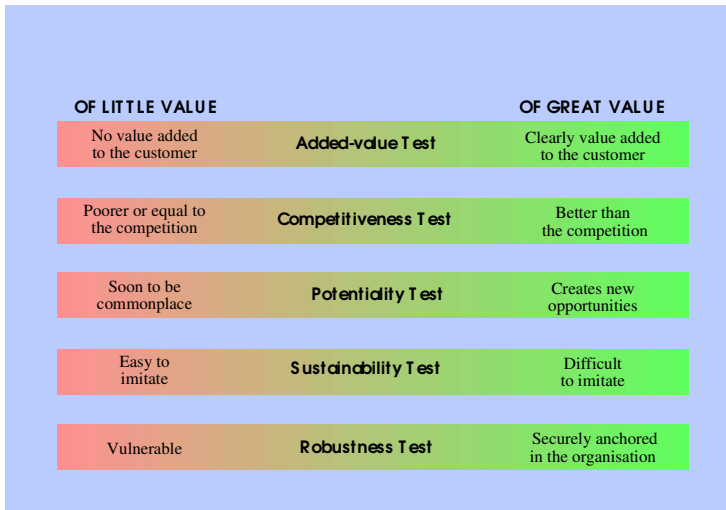
*Core competence: Printing and stamping*

	Score (0-5)
Value added test	4
Competitiveness test	2
Potential test	1
Sustainability test	2
Robustness test	5

The result of Step 2 is a score for each core competence for the five tests, providing a standardised picture of the strength of each competence.

**3.5 Step 3: determine the value**

50. The value of a core competence, and therefore the value of the company's intangible assets, is calculated using the relationship between the strength of a core competence and its value to the company. After all, the higher the customer benefits, the more valuable the competence; the longer the sustainability, the higher the value, etc.



51. Every test in Step 2 therefore provides an indication of the value of a core competence, as shown in the figure above. Because all five factors are essential for the value of a core competence, its total value can be determined by multiplying the five indicators with each other:

$$\text{Value of core competence } V_{CC} = \text{added value} \times \text{competitiveness} \times \text{potential} \times \text{sustainability} \times \text{robustness}.$$

52. In words, this formula means that the value that a core

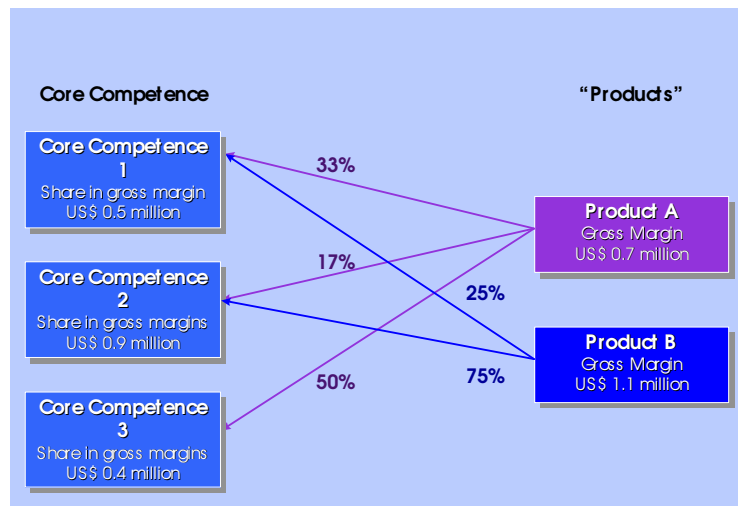
competence adds to a company equals the added value of the core competence for the customer, given the current competitive relationships; the growth that can be expected in the coming years (potential), and the number of years for which it can be exploited (sustainability). This is then corrected by a factor showing whether there is a risk that the company will lose the core competence prematurely (robustness).

53. In order to make the above multiplication, the indicators must be expressed in factors to which a figure can be assigned.

*Added value and competitive advantage*

54. How can the “added value” and “competitive advantage” indicators be made operative? The solution to this problem is based on the following line of reasoning. The fact that a core competence has added value enables companies to sell products and services and so to realise a margin. A company can increase its margins by being better than the competition. Customers will be prepared to pay more for a core competence that offers them high added value and that is better than the competition. This will consequently generate a high gross profit. If the competence has low value added and is less well-developed than the competition, the customer will not be willing to pay much for it. The gross profit is therefore a measure of the added value of a core competence, given the competitive relationships.

55. Obviously, core competencies themselves are not on sale. For this reason, the products or services that can be realised thanks to the core competence must be considered in order to determine the gross profit. The gross profit of these products can then be divided over the underlying core competencies. The added-value factor and the competitiveness factor of a core competence are determined by calculating the gross profit of the products to which the core competence contributes.



56. The gross profit, rather than the net margin, was chosen as the basis, because the gross profit, or contribution margin, provides a better picture of the turnover that a particular product generates without the figure being distorted by overhead costs. In the method, the gross profit is determined by deducting the direct costs from the income generated by a product.

57. A product or service is not realised solely through intangible assets, but also with tangible and financial assets, and by maintaining net working capital. Because the objective of the method is to determine a value for the intangible assets alone, the gross profit must be corrected for the return on the visible net invested capital needed in order to realise a product or service.

58. The analysis may show that the gross profit attributed to the core competence is negative. In this case, one must determine whether this is because the core competence is at the end of its life cycle (in which case a negative margin is correct), or at the start of its life cycle, which means that investments so far exceed the returns. In the latter case, a prognosis is made of the cash flow that can realistically be expected on the basis of the future potential.

59. Appendix 1 includes a calculation of the gross profit for each of the core competencies of Puzzled & Son.

#### *Potential factor*

60. The “potential” of a core competence is made operative in a potential factor. This factor is expressed as an expected growth percentage of the gross profit per year. The growth percentage may also be negative if the gross profit is expected to diminish. The Potential score is used as a basis for the determination of the potential factor. The analyses of past growth and expected growth in the near future are then used to determine a percentage. Market developments are also taken into account here.

#### *Sustainability factor*

61. The sustainability factor is a translation of the “sustainability” indicator and shows how long a company can sustain a lead over the competition in this core competence. This factor is expressed in years. The sustainability score is used as a basis for the determination of the sustainability factor. Developments in the market and among competitors are also taken into account.

62. The sustainability factor is actually a measure of the rate at which the company should “depreciate” the core competence. Depreciation of tangible assets is based on the life of the asset concerned. The life of intangible assets is directly dependent on the speed at which the competition acquires or even exceeds similar assets. Depreciation of intangible assets must be a function of your competitive advantage.

#### *Robustness factor*

63. The “robustness” indicator is translated in a robustness factor. This factor is expressed as a risk percentage. The robustness score is used to determine the robustness factor, which shows how well the competence is embedded in the organisation and how great the chances are that the company will retain the core competence in the future.

Example: value of a Puzzled & Son core competence  
Core competence 1: "Printing and stamping"

	Factor	
Gross profit	7.7	Millions of US \$
Potential factor	-3	%
Sustainability factor	2	Years
Robustness factor	100	%

The value of all factors is now known for each core competence. To determine the value of the core competencies, the following formula is applied to each one:

$$V_{cc} = \left[ \sum_{t=1}^S GP * (1 + P)^t \right] * R$$

where:

- $V_{cc}$  = Value of a core competence
- $GP$  = Share of the gross profit
- $P$  = Potential factor (annual growth percentage of the gross profit)
- $S$  = Sustainability (in years)
- $R$  = Robustness (risk percentage)

64. The formula means that for the life-cycle  $t = 1$  to  $S$ , the share in the gross profits of the core competence in each year is summed, taken into account an increase each year by  $P\%$ . This figure is multiplied by the robustness of the core competence ( $R$ ).

65. Each core competence consists of intangible assets. The total value of the strategically important intangible assets can therefore be determined as the sum of the value of the individual core competencies.

$$V_{ia} = \sum V_{cc}$$

where:

- $V_{ia}$  = Value of the intangible assets contributing to the core competencies
- $V_{cc}$  = Value of a core competence.

66. The result of Step 3 is a determination of the value of each individual core competence and of all core competencies combined. This therefore also determines the value of all intangible assets that are of strategic importance for the company.

#### Discounted cash flow method

A parallel can be drawn between this method and the discounted cash flow (DCF) method. The DCF method is used to determine value. The cash flow is discounted, which means that it is corrected for the factors of time, interest (growth rate), and risk. In the KPMG method, the gross profit is similarly corrected for a growth factor (the potential factor), a time factor (the sustainability factor), and a risk factor (the robustness factor).

The KPMG method differs from the DCF method on three important points:

The method considers the potential of core competencies, and not only the potential of products, thereby taking account of new market opportunities and not just the existing activities and those planned for the near future.

The method can attribute the value of the intangible assets to the underlying core competencies.

The method considers only the future cash flows from activities that build on core competencies. Activities that do not involve the application of core competencies are not included in the calculation.

### 3.6 Step 4: monitor progress

67. The method developed by KPMG provides the management of a company with two tools for monitoring the progress of the careful managing of core competencies: a dashboard showing the results of the tests and valuation, and a management agenda with points for attention.

68. The results of the checklists show why the strength of each core competence is high or low. By presenting the scores in a table, management can quickly see the reasons and the areas on which it should focus. This can be used as a basis for specific recommendations. The table is a kind of dashboard. Together with the management agenda, it forms the core of reports to the client. The Puzzled & Son “dashboard” is shown in Table 2.

69. At Bank BV, for example, one core competence was found to have a low robustness score, partly because the critical group of employees for the core competence proved to be smaller than five. In order to improve the score in this area, specific attention must be given to expanding this group of employees or to improving their knowledge management. This was included in the management agenda.

Table 2: The dashboard for Puzzled & Son (1998)

<i>Core competence 1: Intellectual entertainment</i>	Score		Factor	
Added value test	4			
Competitiveness test	3	Gross profit	11.9	Millions of US\$
Potential test	5	Potential	11	%
Sustainability test	3	Sustainability	3	Years
Robustness test	5	Robustness	100	%
Value (in millions of US\$): 44				
<i>Core competence 2: Printing and stamping</i>	Score		Factor	
Added value test	4			
Competitiveness test	2	Gross profit	7.7	Millions of US\$
Potential test	1	Potential	-3	%
Sustainability test	2	Sustainability	2	Years
Robustness test	5	Robustness	100	%
Value (in millions of US\$): 15				
<i>Core competence 3: Graphic design</i>	Score		Factor	
Added value test	5			
Competitiveness test	1	Gross profit	9.5	Millions of US\$
Potential test	5	Potential	14	%
Sustainability test	1	Sustainability	1	Years
Robustness test	3	Robustness	60	%
Value (in millions of US\$): 7				

Total value of intangible assets: US\$ 66 million.

*Notes to Table 2: the dashboard for Puzzled & Son*

Puzzled & Son has three core competencies:

- Intellectual entertainment: The ability to design innovative and creative intellectual entertainment.
- Graphic design: The ability to develop graphic designs, images, and virtual worlds using desk-top publishing software.
- Printing and stamping: The ability to print and stamp difficult materials in order to produce special games for customers.

“Intellectual entertainment” is the company’s most valuable core competence, worth US\$ 44 million. It contributes US\$ 11.9 million to the gross profit. This is expected to grow by 11% per year. Puzzled & Son is expected to retain a lead on the competition in this area for another three years.

The dashboard quickly reveals threats in three areas (a score of 1 on one of the tests). The printing and stamping competence has little potential for the future at present. In the field of graphic design, the company is not really better than the competition and it could quickly lose the advantage that it has.

The total value of the core competencies and thereby, of the intangible assets of strategic importance, is US\$ 66 million.

The management agenda for Puzzled & Son is as follows:

“The audit of Puzzled & Son’s intangible assets produced the following items for the management agenda:

*Added value*

Key question: Does your company continually provide more added value than its customers expect?

Your present customers appreciate your company for the creativity of your games. At the same time, market demand is shifting continually towards electronic entertainment. The competition from Asia in the field of jigsaws will continue to increase, so that the margin will continue to shrink. It is advisable to increase the rate of product innovation in the area of intelligent computer games.

*Competitive advantage*

Key question: Will your company continue to distinguish itself from the traditional and new competition?

Your company has captured a position as a niche player in your own market. The distinctive ability is based primarily on the quality and intellectual level of your games. You should seek the same niche in the electronic games market.

*Potential*

Key question: How can your company avail itself of new opportunities with its core competencies?

A decline in the application of your printing and stamping technologies is to be expected in the coming years. You will have to seek new applications of your graphical competencies faster, for example through an alliance with an Internet provider in order to develop the Internet as a sales channel for games.

*Sustainability*

Key question: How will you remain better than the competition?

Innovations in the design of electronic games are progressing very fast. On your own, you will probably not be able to keep pace. It would be advisable to form an alliance with developers of graphical software.

*Robustness*

Key question: Which measures will you take to retain your core competencies?

The core team for your graphical competence is very small. It would be advisable to expand this team and to ensure that the members will still want to work for you in the future.”

### 3.7 Possibilities for external reporting

70. Management could decide to include the information generated by this audit in its external report, with the aim of informing its stakeholders. An appendix to the financial statements would be an option. The company will have to consider which information is suitable for disclosure and which is sensitive in competitive terms.

71. There are three reasons to publish the results of the method in some form:
- An insight into the company’s economic potential could help to reduce the cost of capital, as it can reduce the risk.
  - The company shows that it is managing its intangible assets with care, which could have a positive impact on its image.
  - The company can show the labour market that it values properly its employees and the value of their knowledge and skills. At present, with a battle for talent in progress in many sectors, this could provide an important competitive advantage.

72. The management of the three companies in the pilot study were very reluctant to the idea of disclosing the results of the method. Information on the company’s core competencies, their strength, and their value was seen as highly strategic information that should not be made available to competitors. One managing director said: “I won’t publish these results for another six years.”

73. One could therefore consider publishing the results only in general terms, without going into details. There are three possibilities here:

### Index

Once the value of the intangible assets has been determined for a number of years, the movements can be shown in an index. Fluctuations in the index can be explained in qualitative terms. This shows movements in the value of the core competencies over time.

### Ratios

The method developed by KPMG contains three indicators in which the total value of the core competencies is related to a number of the company’s key data (see Table 3):

Table 3: Ratios

1. Indicator	1. Definition
2. Knowledge intensity	2. Value of intangible assets/ Value of tangible fixed assets in the balance sheet
3. Potential indicator	3. Value of intangible assets/ Gross profit attributed to the core competencies
4. Balance sheet indicator	4. Value of intangible assets/ Shareholders’ equity

The *knowledge intensity* shows the ratio between the value of the intangible assets and the tangible fixed assets in the balance sheet. If the knowledge intensity is more than 1, the intangible assets are more important than the tangible assets. The higher the indicator, the more important the intangible component.

The *potential indicator* is the weighted average of the potential, the sustainability, and the risk factor of all the company’s core competencies, and therefore shows the multiplier of the core competencies on the gross profit. This is a relative measure of the company’s economic potential. The economic potential of companies is determined by the extent to which they pursue a clear and sound strategy. The potential indicator therefore immediately provides information on the company’s strategic policy. This indicator can therefore be compared with that of all other companies, regardless of the sector in which they operate.

The *balance sheet indicator* is the ratio of the value of the intangible assets to the conventional balance sheet value in the form of the shareholders’ equity. This indicator shows the extent to which the conventional balance sheet value is a good indicator of the value of the company. The higher the

indicator, the greater the imbalance between the company's true value and its visible net asset value. This indicator, too, can be compared with that for all other companies.

These ratios can be published in the report of the managing board or in an appendix to the financial statements. If different companies do this, comparisons can be made between companies, without relation to the sector in which they operate. This makes this a tool suitable for the knowledge economy, in which the boundaries between sectors are becoming increasingly obscure.

#### *Qualitative results*

The use of the method for careful management of intangible assets can be included in the report of the managing board or in an appendix to the financial statements. A qualitative description of the management's policy on improving the added value, competitiveness, potential, sustainability, and robustness of these assets can also be provided.

## 4. IMPLEMENTATION

### 4.1 The approach

74. There are three ways to perform this audit: a purely expert-driven approach, a participative approach, or an independent approach. With an expert-driven approach, the entire study is performed by an external specialist, such as an accountant. With a participative approach, the external specialist works with company employees on the audit. With an independent approach, the company itself conducts the entire audit. If necessary, the implementation can be evaluated, or the method used can be audited by an external specialist. This depends on how that company wishes to inform the outside world of the results.

75. In the pilot studies, a participative approach was chosen. The audit was performed in close co-operation with the company, since the company itself will have to work with the results in the future. Close co-operation led to greater commitment, more valuable input, and a broader base of support. Ultimately, an expert opinion was provided in the form of a final report to the customer.

### 4.2 The organisation

76. As mentioned above, this study was conducted in close co-operation with the companies. Decisions on the intensity of co-operation were taken together with the company. Three possibilities were put to the company. The choice depended on the available time and resources. See Table 4 for the three options.

Table 4: Three options for customer involvement

Large amount of information available	Little information available	Joint information-gathering
Four two-hour interviews with key officials	About six two-hour interviews with key officials	Formation of KPMG/customer team
Two three-hour working conferences with three key officials	Two to three three-hour working conferences with key officials	Joint environmental and future analysis
Requests for information from personnel department, finance department, IT department etc.	Two-way feed-back meetings with key officials	Joint interviews with four key officials
One two-hour feed-back meeting on results of meetings with three key officials	Requests for information and active assistance from personnel department, finance department, IT department etc.	Two three-hour working conferences with three key officials
One two-hour final presentation meeting with key officials	Interviews with customers	Joint information-gathering from personnel department, finance department, IT department etc.
One point of contact for the entire project	One two-hour feed-back meeting on results of meetings with three key officials	Interviews with customers
	One two-hour final presentation meeting with three key officials	One two-hour feed-back meeting on results of meetings with three key officials
	One point of contact for the entire project	One two-hour final presentation meeting with three key officials
		Time required from team members: about 2 days per week for eight weeks

### 4.3 The phases

77. The study starts with a description of the company and a survey of its environment. A number of fact-finding meetings and specific interviews are conducted for this survey, with the company's senior or middle management. This is important in order to identify core competencies. The core competencies identified are defined in the first workshop.

78. Additional information is gathered in the second workshop. The information is then analysed and used to determine the value of the core competencies. An opinion is provided on the value of the assets, and on their management and potential. If necessary, additional information is then gathered. After the provisional results have been tested, the final information is accumulated and the final report is written.

79. This approach takes about ten weeks to complete. The company needs to make 30 to 50 hours available for the interviews and for attending the workshops. The administrative departments must also make time available for gathering additional information. The time devoted by the specialists is between 100 and 200 hours.

*The contents of the core competence document are as follows:*

1. General information
2. Customer groups and requirements
3. Market and competition
4. Products and services
5. Business processes
6. Organisation and personnel
7. Unique "assets"
8. Knowledge and skills
9. Culture and values
10. Technology and systems
11. Management and leadership
12. Success factors
13. Core competence hypotheses

### 4.4 The core competence document

80. In order to define the environment and the company's future, a number of fact-finding interviews are conducted with people who know the company well. In addition to company employees, the team that audits the company's accounts each year can make a valuable contribution here. The data they provide, and other information obtained in specific interviews is recorded in the basic core competencies document. This document is used in the identification of the core competencies.

### 4.5 The interviews

81. After the survey of the company's environment and future, a number of specific interviews are conducted. The purpose of these interviews is to provide an insight into the company's core competencies in relation to its environment. The interviews are conducted with key officials in the company, often members of the management team. In addition to individual interviews, double interviews are also held. The advantage is that this allows a more effective discussion of the issues. All the information obtained in the interviews is treated as confidential.

### 4.6 The first workshop

82. Following the interviews, a specialist compiles a full, anonymous report. This provides a complete review of the information obtained in the interviews. On the basis of this compilation, the company's core competencies are defined, using the core competencies basic document. In many cases, supplementary market information must also be used. The core competencies are then used to identify strategically important intangible assets.

83. The first workshop is attended by the experts performing the study at the customer, by the entire management team (or a number of delegates) and, where applicable, by the project group formed for the study.

84. During the workshop, feed-back is provided on the compilation report on the interviews. This is the underlying information on which the definition of the core competencies is based. The core competencies identified and the underlying intangible assets are then presented, with the aim of reaching a consensus on the correct definition of the company's core competencies. Only when consensus has been reached on this point is there a sufficient base of support to continue the study. It may therefore be necessary to review the definitions after the discussion on the identified core competencies, and to repeat this session.

85. The first workshop is also used to determine the products to which the identified core competencies make a contribution. It is important to reach a consensus on this point, as the gross profit of these products serves as the basis for determining the value of the core competencies.

#### 4.7 Gathering additional information

86. After the first workshop, additional information is gathered, in order to define the four determining factors for the value of the core competencies: the gross profit, the potential factor, the sustainability factor, and the robustness factor. Additional information is particularly important in order to determine the gross profit for products. For this, interviews are conducted with the controller and/or staff of the financial department. The purpose of these interviews is to obtain an insight into the method of calculating the directly attributable costs. Information from the company's accounts is also used to determine the gross profit.

87. During this phase, information is also gathered on the market, trends, customers, competitors, and products, from sources including:

- Strategy documents
- Market analyses
- Competition analyses
- Customer satisfaction surveys
- Business plans
- Product documentation
- Manuals

88. This information is used to support the test scores and value factors. If necessary, a number of further individual interviews are conducted with specific employees.

#### 4.8 The second workshop

89. The purpose of the second workshop is to reach agreement on the four value factors for each core competence. The workshop participants are the same as for the first workshop. If necessary, other employees are also invited to attend. First, the results of the data-gathering operation are presented to everybody. The participants can then be divided into groups to discuss the scores of the tests and value factors for the core competencies. As a result, the core competencies can be discussed from the point of view of different disciplines.

90. Each group is first asked to define the contribution of the core competencies to the realisation of the products. The groups then discuss the scores for potential, sustainability, and robustness, in order to agree values for the potential factor, the sustainability factor, and the robustness factor.

91. Finally, each group makes concrete recommendations for improving the potential, sustainability, and robustness factors. The potential, sustainability, and robustness scores show the areas for concern and points for attention at a glance. The concrete recommendations form key input for the management agenda.

#### 4.9 The final report

92. The experts annotate the results of the second workshop, with reference to the information obtained in the individual interviews with specific employees and the additional information collected and analysed. The annotated results of the second workshop are then analysed.

93. The outcome is then reported to the company's management in a draft final report, accompanied by the results of the interviews and a breakdown of the core competencies in terms of intangible assets. The management's comments on the draft report are incorporated in the final report.

## 5. THE RESULT

1. Two of the three pilot studies resulted in management reports on the company's intangible assets. The insight into the core competencies, the opinion on the management, and the information on the relative importance of the competencies proved to be valuable for the management and led to strategic discussions. In the third pilot study, the company ultimately proved unwilling or unable to provide the necessary information.

2. In view of the confidentiality of the results, only the knowledge intensity, the potential indicator, and the balance sheet indicator for the two companies can be reported here (see Table 5). Bank BV is the most knowledge intensive and also has the highest potential for the future, relatively speaking. For both companies, the value of the intangible assets was equal to the value of the shareholders' equity.

3. Electro BV is less knowledge-intensive and has less future potential. This is because margins are under pressure in its market and because of the lack of a clear strategic view aimed at increasing the value added for customers.

Table 5: Ratios of two of the companies taking part and of the fictional example

Indicator	Definition	Bank BV	Electro BV	Puzzled & Son
Knowledge intensity	Value of intangible assets/ Fixed assets shown in balance sheet	7.2	2.6	2.5
Potential indicator	Value of intangible assets/ Attributed gross profit	3.2	1.4	2.2
Balance sheet indicator	Value of intangible assets/ Shareholders' equity	1.0	1.0	2.9

97. To determine whether the total value of the intangible assets was in line with other analyses of the companies, it was compared with the market value on the basis of the following formula:

98. Value of intangible assets + shareholders' equity = company's market value

99. The market value of the two companies was determined on the basis of the multiple of the annual profit normally paid for such a company in acquisitions in the sector concerned.

100. In both cases, the value of the intangible fixed assets was slightly lower than could have been expected. This is explained by the fact that the above formula does not take account of factors that increase market value, such as additional synergy benefits for the buyer, or of market psychology.

## 6. LESSONS

### 6.1 Applicability

*Lesson 1: The method can be applied for medium-sized companies and business units, in as far as the latter have their own core competencies. The company or unit must also have been in operation for a number of years.*

101. At present, the method appears to be best suited to medium-sized companies. Large companies often have a wide range of activities. The wider the range, the larger the number of different core competencies. The limit here is determined more by the diversity than by the absolute environment of the companies. The method can also be applied to individual business units of large companies, providing that individual core competencies can be distinguished for these units.

102. One condition for the application of the method is that the company must have some history. It must be an organisation with core competencies and one or more products for which a gross profit can be determined. This means that the method is not suitable for new businesses.

*Lesson 2: The method has added value in various branches, for both successful and less successful companies.*

103. The successful company in the pilot study used the results of the method primarily to assess ways in which the management of intangible assets could be improved. The less successful company used them mainly to help it determine a strategic course.

104. The method can be applied for service companies, trading companies, and industrial companies. It makes no difference whether a company has a goods flow or a trading function. The method also proved to provide added value for both highly successful and less successful companies.

*Lesson 3: A great deal of supporting material is not readily available from companies and has to be obtained separately.*

105. Documents such as business plans, market analyses, competition analyses, and customer surveys are not available in every company. Where they are available, they sometimes contain a large amount of data but little guiding information. Analyses then need to be performed separately to provide good support for the method.

106. This also means that a company dashboard cannot be drawn up without the co-operation of the company itself. It is not, therefore, a tool that financial analysts can apply themselves, on the basis of information from the financial statements, for example. It is a tool to be applied by the management of a company, if necessary in co-operation with its accountants or a consultant.

The management information available at Bank BV was not geared to reporting on margins per product. When the gross profits were determined in order to complete the dashboard, this information also proved to be interesting to the management.

*Lesson 4: The method makes demands on the quality of the financial administration.*

107. In order to determine the gross profits on products, the accounts must in some way provide an insight into the direct costs and returns for products. This sometimes means that costs have to be attributed to products on the basis of a random sample, or on the basis of assumptions. In the pilot studies, this proved to be necessary only to a limited extent.

Bank BV could not provide an insight into the administrative costs for the settlement of different transactions. These costs are attributed to the transactions on the basis of the number of times that each transaction occurs.

## 6.2 Implementation

*Lesson 5: The use of working conferences increases management involvement in the results of the audit.*

108. A forward-looking determination of the value of intangible assets requires that a number of estimates be made about market developments and the position of competitors. During the pilot studies, working conferences were used to mobilise the knowledge available within the company on these points and to discuss the results of the analyses. Another advantage of the working conferences was that they increased the base of support for the results.

*Lesson 6: Thinking in terms of core competencies is easier for some companies than for others.*

109. People who work in the financial services sector are often used to looking at companies in terms of shares. In their day-to-day work financial people have to estimate the performance and future potential of such shares on the basis of hard and soft information. It therefore proved fairly easy for those employed by the financial institution to work with the concepts of this method.

110. Hamel's theory of core competencies has existed for quite some time. Nevertheless, it is not yet familiar to many companies. In practice, some companies find it easier to assimilate than others. This is partly due to the level of education and partly to the level of abstraction with which the management already views its own company. This means that the phase involving the determination of core competencies can take more time at some companies than at others.

*Lesson 7: Each of the individual steps in the method has added value.*

111. The determination of core competencies, and also the preparation of a clear categorisation of products and the determination of gross profits in themselves, provide a great deal of added value. It is useful for virtually any company to consider its core competencies and their future potential. The determination of gross profits is also often valuable in order to determine whether certain products or services do actually contribute to the results.

Bank BV had a feeling that one of the services provided to a specific group of customers was not profitable and, therefore, that it might be better to dispose of this. After the gross profit was calculated for this service, it actually proved to be very positive.

*Lesson 8: The added value of external experts in the application of this method lies mainly in their ability to "hold up a mirror" to the company.*

At the start of the pilot study at Electro BV, some of the employees informed us that the company had recently launched a very large number of new products. However, the analysis showed that the core competencies that contribute to the "traditional" products were still the most valuable.

112. An external consultant can force the management of a company to take a critical look at its own performance, so that matters are not seen through rose-tinted spectacles. An external consultant can question management's assumptions and presumptions. The consultant can also make recommendations to the management, on the basis of his or her own expertise, on how the management of intangible assets can be improved and can help to formulate the core competencies. A company could avail itself of the services of an external consultant in the first year. In subsequent years, it can apply the tool itself.

## 6.3 The result

*Lesson 9: Management time and commitment is a precondition for success.*

113. Management commitment proved to be a precondition for the successful application of the method. In the pilot studies, it was far easier to collect the information and data and the added value was greater in those companies where management provided full support for the study, in both word

and deed. In the pilot study that ultimately failed to lead to a report, there was not enough willingness to make sufficient time available to provide the necessary data.

*Lesson 10: If a company does not have a clear strategy, the value of its intangible assets is low.*

114. A company that does not have a clear vision of where it wants to go has considerable difficulty in determining its core competencies and in assessing their strength. The question of “What kind of company do we want to be and what do we want to be good at?” always plays a key role in the definition of core competencies. The products and services for which a company wants to apply a core competence play a primary role in determining the strength of that competence.

Bank BV proved to have a special competence in realising value from other people’s ideas. The company regularly recruited new employees with original ideas from the sector and gave them an opportunity to introduce a new product to the market. The fact that these special activities could never be allowed to become the company’s core was explicitly taken into account in the assessment of the potential of this core competence. For this reason, the estimate of the potential was lower.

*Lesson 11: The management agenda and the dashboard are more important than the valuation of the intangible assets.*

The management of Electro BV used the results of the study to make strategic choices on the company’s future course. A debate was conducted about the direction that the company should take and the products that should be offered in the future on the basis of the categorisation of the products and the definitions of the core competencies.

115. The strategic debate on core competencies and the insight that the dashboard provides with regard to their strength proved to be more valuable to the management of the companies taking part than the ultimate valuation of the intangible assets. The companies very much appreciated the fact that their operations were considered from a different point of view, focusing on their future development.

*Lesson 12: The analysis of the inter-relationships between intangible assets provides a large number of useful insights.*

116. In each pilot study, the management of the company had some idea of which intangible assets were important. Analysing these as part of a number of core competencies gave rise to a coherent analysis which separated the chaff from the corn. The core competence debate helped to determine which intangible assets were really important and the extent to which they were better-developed than at rival companies.

The ability of Transport BV to operate efficiently proved to be a combination of a result-oriented culture, the ability to take decisions quickly, short management processes, and a managing director who was also a shareholder, which gave the company a financially independent position.

## 7. THE EVALUATION

### Criteria

117. At the start of the development process for the method, the following four requirements were imposed:
- Applicability: efficient to implement, clear, practical to apply, and user-friendly
  - Reliability: generating confidence, objective, and reliable
  - Relevance: consistent, relevant, and coherent
  - Added value: value added by each stage of implementation.

### 7.1 Applicability

118. The method is fairly labour-intensive when it is applied for the first time in a company. Determining core competencies and collecting data demands some effort on the part of the company itself. An external consultant can play a valuable role here. In subsequent years, the method is less labour-intensive because often, re-calculating the different factors will then suffice.

119. Standardised questionnaires, check-lists, and documents are used at each stage of the method. This makes it transparent and user-friendly. The method does require that the company has the capacity and willingness to take a somewhat abstract and more evaluative view of itself, using the concept of core competencies.

120. A precondition for the application of the method is that the company already has a history. It must be an organisation that has built up core competencies and that has one or more products for which a gross profit can be determined. This means it is not a tool that is suitable for new businesses. The company must also be a coherent unit and must not have too great a diversity of activities.

### 7.2 Reliability

121. The method developed by KPMG determines the value of intangible assets on the basis of their future economic potential. Can this provide a single value that can be determined objectively? In order to answer this question, one must first define what, in today's knowledge economy, determines the future cash flow from the deployment of intangible assets

122. The assets themselves are not usually the problem. There is often no shortage of knowledge, if only because knowledge is not "used up" when it is consumed. The future cash flow in an economy where success is determined by speed, innovation, and added value depends on the ability to apply the assets. The company's view of the market and its own strength play a decisive role here. At 3M, a failed experiment produced a glue with little adhesive power and, therefore, resulted in knowledge with "no value". But with the innovative and creative idea that people like to be able to stick up pieces of paper temporarily and that the glue was perfect for this purpose, the knowledge was worth hundreds of millions of dollars in future cash flow.

123. The value of knowledge and other intangible assets is therefore a direct function of the company's view of market opportunities and of its capacity to find applications with a high added value for customers. The same knowledge can be worthless to one company and worth millions to another. The result of the method developed by KPMG therefore is a value of intangible assets given

Following the introduction of the digital GSM telephone, the Dutch PTT was left with an obsolete analogue mobile network. But a new point of view (that the analogue mobile telephone could be marketed cheaply under the Hi! brand name as a life-style product) generated a new cash flow from an obsolete production asset and also a new brand that could be used for a predominantly youth market. The Hi! brand is now also used to market digital telephones.

the company's viewpoint on the future at a specific moment in time.

124. The KPMG method makes a company's assumptions explicit and transparent for everyone. Consequently, the method produces an inter-subjective result. It is neither possible nor desirable to determine the value of intangible assets objectively. After all, the same assets may be worth more in the hands of a company with a more innovative view of the market. The potential indicator included in the method developed by KPMG is a measure of the potential of that point of view.

### 7.3 Relevance

125. The primary purpose of the method is to improve the internal management of intangible assets. The method therefore focuses on the company's future and the related strategic issues. This is relevant for every company. The development of core competencies can be measured annually and the strategy can then be adjusted. Bank BV, for example, used the results as input for the development of its employees' competencies. At Transport BV, the method led to a new debate on management processes and the importance of culture. Electro BV used the results as the starting-point for a discussion of the company's strategy.

126. The method can also distinguish strategic intangible assets from other intangible assets. If the company's economic potential needs to be defined, it is not appropriate to list all the intangible assets that are currently not included in a conventional balance sheet valuation. Only the assets that provide substantial value added in the company, and that are of *strategic* significance, are relevant.

127. The *inter-relationships* between the intangible assets are also examined. Intangible assets such as knowledge, skills, culture and values, and standards only have a value in the context of the company concerned and in relation to each other and to other assets.

128. The method approaches each company as a unique business; this does justice to the specific situation in which a company operates. One of the key success factors in the present economy is the need for companies to be unique. At the same time, the results of the method (the value of the intangible assets and the Knowledge Intensity, Potential Indicator, and Balance Sheet Indicator ratios) can be compared with those of other companies, so that companies can be assessed on the same basis.

129. The method can supplement the tools used in mergers and acquisitions. For example, it can be used to attribute the market value of a company determined on the basis of the DCF method to core competencies, which increases the transparency, provides a view of the company's economic potential, and makes information available on additional synergy benefits with the acquiring party.

130. The results of the method can play an important role in the information provided by a company to its shareholders and supervisory board. This provides them with an insight into the company's strategic position and the extent to which it is "fit for the future". The information can also be provided, in confidence, to analysts.

131. The results can also be reported externally. For stakeholders, for example, movements in the core competencies over a number of years provide interesting information. For providers of capital, the method offers an insight into the underlying factors that contribute to the item "goodwill", which at present is often a "black box". The Knowledge Intensity, Potential Indicator, and Balance Sheet Indicator ratios developed in the method could also be significant in the economy if substantial numbers of companies use them. Finally, external publication of the results can contribute to the company's image, particularly in the labour market, since it can be used to show that the company treats intangible assets such as its employees with care.

#### 7.4 Value added

132. In the pilot studies, the method was shown to offer added value to both successful and less successful companies. In all cases, important strategic issues were raised. The different steps in the method, such as the determination of core competencies and the performance of market and competition analyses, often proved to be valuable in themselves.

133. The method would appear to offer added value in the case of mergers and acquisitions. In due diligence inquiries, it can be applied for a systematic and specific definition and valuation of the company's intangible assets.

## **8. RECOMMENDATIONS**

1. The Ministry of Economic Affairs has taken a very valuable initiative in commissioning pilot studies from four firms of consultants. Instead of commissioning yet another theoretical study, the Ministry has opted to enable consultants and accountants to gain practical experience for themselves. In our case, the multidisciplinary deployment of specialists that the Ministry required has proved to be productive.
2. The results of KPMG's study are promising. Two cases produced usable results that the management of the companies regarded as worthwhile. In all three cases, the steps in the process were seen as valuable. This success should be developed along a number of lines.
3. Firstly, testing of the method could be expanded to a larger number of customers, by offering them an opportunity to gain experience with the method. The results of these tests can be used to improve the tool further and at the same time, a critical mass of users will be built up.
4. Secondly, the method can be further improved by considering how it can be used to generate management information on a permanent basis. The method should actually form part of the regular management information system.
5. Finally, ways to obtain longitudinal data and to compare companies must be considered. The possibility of comparison will only occur when a substantial number of companies calculates and publishes the ratios. Standardisation of the method and the possibility for companies to certify their method of applying it could make a significant contribution to the comparability and, thereby, the value of the indicators for knowledge intensity, potential, and the balance sheet.

## APPENDICES

### APPENDIX 1: DETERMINATION OF GROSS PROFITS

This Appendix explains how the share of each core competence in the gross profits was determined.

Puzzled & Son's financial statements

*Profit & Loss Account (in thousands of US\$)*

1998	Jigsaw puzzles	Puzzle books	Round games	Computer games	Total
Net sales	32,278	23,312	16,139	17,932	89,662
Direct costs	19,445	16,498	14,731	8,249	58,923
Overhead					18,699
Financing results					1,623
Results					10,417

*Balance sheet (in thousands of US\$)*

1998	Assets		Liabilities
Fixed assets	25,890	Equity	22,374
Current assets	16,793	Long term debt	8,340
Cash	1,984	Provisions	2,850
		Current liabilities	16,103
Total	49,667		49,667

*Net sales (in thousands of US\$)*

	Jigsaw puzzles	Puzzle books	Round games	Computer games	Total
<i>Estimate 2001</i>	28,500	15,000	15,000	46,000	115,500
<i>Estimate 2000</i>	25,000	15,400	15,400	34,000	104,100
<i>Estimate 1999</i>	31,000	24,000	15,800	25,000	95,800
1998	32,278	23,312	16,139	17,932	89,662
1997	29,050	20,981	14,525	10,465	75,022
1996	26,145	18,883	13,073	2,564	60,655
1995	23,531	16,995	11,765		52,291

Gross profit per product

The gross profit of the products calculated is corrected by 5% compensation for tangible assets, financial assets, and net working capital. In the following table the gross profit for each of Puzzled & Son's products is calculated.

*Calculation of Gross profit per product (in millions of US\$)*

	Gross profit	Compensation for tangible and financial assets*	Result
Jigsaw puzzles	12.8	0.7	12.1
Puzzle books	6.8	0.4	6.4
Round games	1.4	0.1	1.3
Computer games	9.7	0.5	9.2
Total	30.7	1.7	29.1

\* The compensation for tangible and financial assets and net working capital is 5% of the sum of the fixed assets, stocks, short-term receivables and cash items in the balance sheet, less short-term liabilities.

**Calculation of core competence's share in gross profit**

The contribution of a core competence to the realisation of a product always varies. The core competence can make a essential, substantial, or supporting contribution, but may also make no contribution at all. The contribution is material if the core competence constitutes the core of the product. It is substantial if the core competence contributes to the success of the product and supporting if the core competence supports the realisation of the product. This is shown in the competence-product matrix.

*Competence-product matrix*

	Jigsaw puzzles	Puzzle books	Round games	Computer games
Printing and stamping	3	0	2	0
Graphic design	1	1	2	3
Intellectual entertainment	1	2	3	3
Total	5	3	7	6

- 0 = No contribution
- 1 = Supporting contribution
- 2 = Substantial contribution
- 3 = Essential contribution

The gross profit per core competence can now be determined as follows: Using the competence-product matrix percentages are calculated that describe the contribution of each core competence to each product. The percentage contribution of the core competence to the product is then multiplied by the gross profit of the product. This is done for all products to which the core competence makes a contribution.

*Share of contribution margin*

	Jigsaw puzzles	Puzzle books	Round games	Computer games	Share of gross profit (in millions of US\$)
Contribution margin	12.1	6.4	1.3	9.2	29.1
Printing and stamping	60%	0%	29%	0%	7.7
Graphic design	20%	33%	29%	50%	9.5
Intellectual entertainment	20%	67%	43%	50%	11.9
Total	100%	100%	100%	100%	29.1

## **APPENDIX 2: EXPERTS**

The knowledge, skill, experience, and enthusiastic support of the following team of experts was used in the development of the method:

- Rene J. Tissen, Director of KPMG Knowledge Management and Professor of Business Management at Nijenrode University.
- Willem Dercksen, Director of KPMG Economic Reasoning Bureau and Professor of Social and Economic Policy at the University of Utrecht.
- Johan van Helleman, RA, Director of KPMG Accountants and Professor of Accounting at the Catholic University of Brabant.
- Guus Landheer, Director of KPMG Corporate Finance.

## NOTES

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<sup>1</sup> *Op weg naar Nederland Kennisland* (“Towards Holland, Knowledge Land”), R.J. Tissen, N. den Haan and S. Jongedijk, Nijenrode University Press, 1998

<sup>2</sup> Taken and edited from “Yahoo!”, Fortune Magazine, 3 February 1998

<sup>3</sup> *Externe Verslaggeving* (“External Reporting”), J. Klaassen, G.G.M. Bak, Stenfert Kroese, 1993

<sup>4</sup> *Ondernemers zijn ezels* (“Businessmen are Asses”), P. Fentener van Vlissingen, Van Halwijck Leuven, 1995

<sup>5</sup> *Golfer verkoopt zijn toekomst* (“Golfer sells his future”), Het Financieele Dagblad, December 13, 1997; *Aandelen `Maarten Lafeber`* (“Shares in Maarten Lafeber”), Het Financieele Dagblad, January 10, 1998

<sup>6</sup> *How to Write a Great Business Plan*, William A. Sahlman, Harvard Business Review, July-August 1997