

# How can corporate competence be measured?

Ágnes Laáb

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## Abstract

*This paper is about the phenomenon that competence assets never manifest in their whole magnitude and worth. Due to this fact, we do not have complete and fully reliable information about their real magnitude, either in quantity or value. And yet, this may not give an excuse not to look into this matter and not to manage this important and increasingly significant asset in accordance with its – specific – worth!*

*The competence assets of a company consist of two parts: partly the competence synergy made up of the employees' cooperation, relations, joint successes and failures, and partly that part of the personal competences of employees, by which they generate value for the company.*

*It is expected that from the scope of competence assets, asset items similar to intellectual assets can be removed and then turned into tangible assets (they can be separated from the person who created them) and because they meet the balance sheet criteria, they become appraisable as independent asset items. Such factors can be, for example, the customer value and the customer lifetime value in the case of such servicing companies, where the customers take the commitment for an undefined period of time, but for a longer term anyway to make use of the company's services on a monthly basis. In such cases customer relations are prioritised as corporate resources having an independent value. In this paper, however, we are focusing on those flow items of the competence assets, which are difficult to alienate from employees.*

## Keywords

*personal competences · corporate competences · intangible assets · competence assessment reserves*

## 1 Are the invisible assets identical with the company's competence<sup>1</sup> assets?

The number of companies is increasing dramatically where the market/business and book values<sup>2</sup> of their assets deviate by an order of magnitude, and this gap is widening year by year<sup>3</sup>. As the gap becomes wider, we have to realise that one of the most important reasons for the deviation is a new *asset item not shown in the balance sheet of the company, namely corporate competence*.

By the turn of millennium, the size of invisible assets has reached about 75 percent of the companies' worth! This means that the tangible assets of an average company – i.e. the net value of assets minus liabilities – represent less than 25 percent of the market value! [3] However, this ratio grows continuously! To depict this increasing trend, let me give you some 2006 figures [4]: the invisible assets value paid for in the purchase price against the book value of assets was 1.68 times higher in the Intel buyout, 8.8 times higher in the case of Coca Cola, 5.9 times higher in the case of Microsoft and 344.1 (sic!) times higher<sup>4</sup> in the case of the Hungarian iwiw!

With the growing role and importance of corporate competence, the booked visible assets including conventional asset items are shrinking increasingly. So much so that gradually they

<sup>1</sup>Competence is an old/new activating productive input which cannot be separated from man, and which is called by many in different ways within a broad spectrum (human capital, knowledge capital, intellectual capital, human resources, intangible assets, non-tangible assets, intellectual assets). Instead of these, it is recommended to use the word competence, because this distinguishing name puts an emphasis on the speciality of competence as a productive input, and this is not or not sufficiently indicated by the notions listed.

<sup>2</sup>Book Value, abbreviated as BV: the net value of corporate assets, which is identified as the difference between all assets and all liabilities in the balance sheet.

<sup>3</sup>For tracking this, it is suitable to use in the case of listed companies for example the so-called Price to Earnings ratio (P/E ratio) which determines how the price of a stock is divided by its earnings at a given time.

<sup>4</sup>*sic* is a Latin word, which means 'thus, in this way'. I wanted to emphasise by using this word that in the case of iwiw the figure quoted is neither a misprint nor a mistake.

Ágnes Laáb

Department of Finance and Accounting, BME, 1117 Budapest, Magyar tudósok körútja, Hungary  
e-mail: [laab@finance.bme.hu](mailto:laab@finance.bme.hu)

are not even distantly related to the actual value of assets. The best picture about this can be obtained when the company is sold, because there can be a widening gap between the company's market value and book value. This difference is called the *invisible assets* by economists.

### 1.1 Competence assets = company's market value minus book value?

Regarding the size of invisible assets, a rough figure can be obtained not only when the company is sold, but also on the basis of the stock price in the case of listed companies, and in the framework of property assessment procedures in the case of OTC companies.

Many are of the opinion that invisible assets are equal to competence assets. No doubt, the deviation between the actual sales price or roughly estimated value of a company and the book price indicates the presence of invisible asset items. The question is: can they be the components of competence assets only, and if so, does their company value (goodwill) reflect their realistic size?

First of all, we have to find an accurate definition for 'intangible assets': In international accounting practice, those asset items in the balance sheet are called intangible assets, which in Hungarian accounting appear in the source and application of funds statement as 'non-tangible assets'<sup>5</sup>, consequently in the Hungarian sense, invisible assets only imply non-tangible asset items not featured in the balance sheet, i.e. those items which do not have a value yet in the source and application of funds statement for accounting purposes.

Competence assets are one – many believe to be the largest – component of invisible assets, but in addition there could be further asset items which (exactly because they are invisible) are also beyond our scope. Such a component within invisible assets could be the component of *non-produced assets* which are examined by researchers dealing with environmental accounting and environmental taxes, but not yet identified with a value today.

However, the difference is caused by something else, too!

The invisible assets realised at the time a company is sold may involve such revaluation and devaluation impacts stemming from a compelled seller's or buyer's situation or from a market

speculation which have nothing to do with the real extent of corporate competence.

If a company is sold and the purchase price is higher than the company's book value, this invisible property is realised, and it becomes part of the visible asset items as 'business value or company value' (goodwill). The positive difference is in a visible form also as 'extra earnings' in addition to the '*goodwill*'<sup>6</sup>, because the new owner is willing to pay the extra income, because he needs the earning power manifest in the asset items of the given company. He may recognise and pay in the purchase price the expertise and business contacts of the employees he intends to keep, and may appreciate corporate culture. In such a case asset item values representing parts of the corporate competence may indeed appear in the agreed purchase price.

In the practice of selling companies, however, it frequently occurs that *the assets change hands below a realistic price*. The negative business value, the '*badwill*' stems in such a case from the fact – other than speculation and various impacts – that the net assets value of the company has been devaluated, because the business activities carried out with the existing resources do not represent a potential business value for the investor, regardless of the fact that the existing resources of the company could be otherwise new and usable. By the way, in international accounting, it is prohibited to show badwill, as it is to be accounted for at once as an income.

Let us assume that the buyer obtains the company at a purchase price much lower than the book value. *In such a case, however, it is only the value of the assets and not the assets proper which disappears!* This is because, again on the assets side of the source and application of funds statement, all the actual asset items are featured – in a quantity identified in the inventory of holdings. The emphasis is on the word 'actual', which in this case applies to the existing assets.

An asset either exists or it does not. If it does exist, then its value is positive (of course this can be much lower than its historical cost, in fact it may even be zero if it has been depreciated to zero in the meantime). If it does not exist, then its value will be zero. But, it can never be negative! Therefore, it would take great courage to say that the difference between the market price and the book value stems from corporate competence, because in this case we would have to agree with the existence of negative assets<sup>7</sup>!

Many initiatives surface today to survey and estimate the value of invisible assets. For any value assessment, there are

<sup>5</sup>In the current Hungarian accounting practice, the following fall into the scope of intangibles: the capitalised value of foundation and reorganisation, the capitalised value of experimental development, the rights of a property value, intellectual properties, business or company value (goodwill), advance payments on intangible assets and the value adjustment of intangible assets. Of these, the following may not be capitalised in international accounting: the capitalised value of foundation/reorganisation and experimental development. The advance payments do not fall into this category either. Regarding intangible assets, a value adjustment may be made in international accounting only if they have an active market which prevails also at the end of their useful lifetime. In addition, for certain assets (e.g. brand name) there is no definite lifetime in the category of intangible assets, because we cannot tell what the useful lifetime will be. In those countries, a value loss is identified at the end of each year.

<sup>6</sup>The meaning of goodwill is good reputation, which according to the accounting regulations can be included with a value among the assets in the balance sheet in case a company is sold, when the market value is higher than the book value. The value of goodwill in such a case is the difference between the two amounts.

<sup>7</sup>There can be no negative property item among the assets. It cannot happen that I walk into the warehouse and ask for minus two batteries. I can only ask for batteries until the last one is gone. Students learning about the basics of accounting may not pass the test if they are not aware of this!

two basic approaches and numerous versions thereof. In the two basic assessment procedures:

- either we use an approach from the liabilities side of the balance sheet and scrutinise how much future income generating potential the internal funds available to the company carry; this method is called a *business or company assessment*,
- or we use the assets side of the balance sheet as a point of departure and by identifying each asset item, we estimate their individual market value, which method is called an *asset valuation*.

In the privatisation practice of the nineties, in many cases business assessment was used to supplement property assessment, in order to make sure about proper evaluation. It mostly caused a lot of headaches when the company value based on the inventory of holdings and the company value calculated on the basis of the earning power were different by a magnitude<sup>8</sup>, although it only takes common sense to understand that the different points of departure of the two approaches necessarily lead to different net assets values.

Why?

We cannot come to the same result if it is examined in the framework of an asset valuation procedure how much the current market price of the given resource is and in case the highest market price is estimated by a business value assessment on the basis of the future earning power.

For a realistic corporate decision making, it would be necessary to make sure that the assets portfolio embodying corporate competence – which even by a conservative estimate can be considered to be at least as much as the booked assets – is **VISIBLE**. Only this can be expected to ensure that if the expected profit lags behind the profit demand of actual net assets value, we look for the root of the problem at the place where it is!

Let me clarify this through a simplified numerical example.

A company's booked assets amount to 100 billion forint.<sup>9</sup> Its annual profit is 20 billion forint. The earnings on investments amount to  $20/100=20\%$ . This seems to be good and everyone can be happy. However, we know that the competence assets are not included in the invested assets. Let us assume that this value is 140 billion forint. In this case, however, the actually realised profit is  $20/240=8.33\%$ , *much less than the earlier 20%!*

Let us assume that the company's business value calculated on the basis of the future earning power of the company is 200 billion forint. Of the two asset values, the latter is

lower, because it only calculated with a realisable profit. Anyway, the deviation stems from *40 billion forint worth of (unnecessary or unutilised) asset items, and this implies serious business management shortfalls and management negligence!*

Let us think about this example some more! Let us assume that the company is bought up for a price of 20 billion forint. Accordingly, the goodwill is -80 million forint. We know that the employees do not feature with a value in the source and application of funds statement, consequently their book value may not be decreased with a negative business value, not even when the new owner buys the company at a depressed price, because he knows that the current activities will be discontinued and the employees discharged, with a shopping centre built on the purchased valuable area. Nevertheless, the employees who provide corporate competence have been left out of the booked assets. Calculating with an asset value increased by the competence, the goodwill would be  $240-20=-220$  billion forint!

Would this matter, when the new owner is intending to wind up the company anyway? Of course it does! It is not all the same how much property is destroyed by a company sale not thought out well. And it is not all the same either when 400 to 500 people are dismissed by the companies because they hope that a cost cut can be achieved, and they cannot see that they are actually wasting their most important asset!

The invisible assets identified as a difference between the company's market value and book value is not even close to being identical with the company's assets represented by the competence items. However, not even company assessment procedures provide a safe and reliable clue about the actual size of this asset portfolio, because it is not expressed in figures at all<sup>10</sup> or this is only done on the basis of its earning power!

## 2 Is it possible to measure the synergistic competence of companies reliably?

It is difficult to doubt that synergistic competence is also part of a company's assets. However, to assess its magnitude, we have to think in which form could an asset item or the asset growth be introduced into a company's balance sheet with a value.

- Among the resources on the assets side, an asset item can be capitalised, if it meets the balance sheet criteria. Rezső Baricz identified in his book *Mérlegtan* (The science of preparing a balance sheet) (1994) [1] the triple criteria of drawing up a balance sheet, and these criteria are believed to be essential by

<sup>8</sup> At the time, most companies had rundown and obsolete assets, coupled with a low earning power, consequently the difference in many cases was much lower than in our days.

<sup>9</sup> I have chosen a billion forint magnitude, because a Hungarian company with such an asset portfolio is not rare at all and also because an example based on a billion forint magnitude will hopefully make sure about highlighting the problem!

<sup>10</sup> There are such approaches in asset appraisal where after the reassessment of asset items featuring in the balance sheet, the so obtained company value (goodwill) is combined with various invisible asset items, for example the expertise of managers, customer relations, the organised nature of the network are evaluated, but this is not such a method which would assess the individual competences of the associates (managers and employees) working for the company.

Hungarian accounting practice even today. Accordingly, an asset item can be capitalised with a value in the balance sheet if it has an economic (business) value, it can be evaluated independently by being expressed in cash and it is marketable, i.e. it can be alienated on its own. This latter criterion does not feature in international regulations: in the IFRS system the following are the necessary and sufficient conditions of capitalising an item: partly the probability that the asset will bring an economic (business) benefit in the future, and partly that its value can be reliably measured. For capitalising as an intangible asset, beyond the future economic profit, two more criteria have to be satisfied, namely identification and control. From the two types of considerations, the balance sheet criterion that can be extended to cover the competence assets as well, can be expressed as follows:

*The items of competence assets could be shown in a balance sheet, if they had a future earning power, could be individually identified and controlled, and their value expressed in cash could be individually determined. The various elements of competence assets can be individually evaluated, if they can be proven to have market values.*

- However, in the source and application of funds statement, it could happen that the asset value changes *as a result of the integration of operating profits*: if the operations are profitable, this entails an asset growth, but if they are loss making then an asset reduction prevails. In such a case, *on the liabilities side, the balance sheet profits indicate the corporate part of the assets growth or decrease stemming from operations, while on the assets side, this may be manifest in various asset items.*

Concerning synergistic assets – as I am trying to show below – typically rather the latter case prevails! Let us examine whether the capitalisation criteria can be met in the case of synergistic assets.

- 1 The *synergy resulting from corporate culture, behaviour rules within the organisation, behaviour patterns and joint successes and failures experienced* is strongly tied to persons, and may simply disappear into thin air when person(s) generating the synergy leave(s) the company. Therefore, the creation of synergy is not a question of decision: maybe it is generated even at times when it is not expected, and it may very easily go away!
- 2 Synergy is uncertain: it cannot be subjected to stock taking and may not be individually identified, because it has an imminent characteristic, namely that it is created by the interrelationship and mutual relations of several people! Experience shows that *competence synergy manifest in relations* is also strongly tied to the person who has set up and cherished this relationship. Even if he happens to leave with his ex-company the list of partners relating to the contacts established by him or even the actually concluded contracts, without him only a

fraction of these established opportunities can be made use of by an appointed successor.<sup>11</sup>

- 3 It is very risky to assess the value of synergy: synergy is indeed intangible, unpredictable and especially cannot be type-cast! Preserving a large part of the *structural asset items*, for example corporate culture or the internal organisational codes already drawn up is mostly impossible realistically – again as shown by experience – because the new managers rarely consider continuity to be a corporate value. Generally, they *ab ovo* reject whatever the earlier associates have established, they basically question the earlier codes of procedure and introduce new ones in accordance with their own expectations.

Some further arguments to show why synergistic competence is so incidental and volatile:

- From time to time by chance the company becomes the beneficiary of such a synergistic competence with which it had nothing to do. Such an occasion can be, for example, when a more intimate relationship is established between two employees and – because they want to impress each other – the intention to please the other person encourages them to boost the performance. (However, when the relationship between them deteriorates, the company may also lose as a result of the failed relationship).
- Who would not be aware of the performance boosting effect of competition within the company, which also results in synergistic competence? At the same time, how many times can we witness the fact when two otherwise talented people, families or a workplace community or companies contest in a tug of war and the synergies resulting from counter-emotions and rivalry, i.e. opposite energies cancel each other out and the resulting effect is zero or perhaps such a Pyrrhic victory<sup>12</sup>, which is not in proportion with the huge loss suffered on both sides.

I believe that synergistic competence cannot be reliably assessed. *Its presence can be concluded from the growth of profit, and its lack is indicated by a decreasing profit:*

- The higher the realised business profit with a company and some of its business units, the more certain it is that synergistic competence plays a role in this.
- And, negative business profit is almost certainly caused by such a cooperation shortfall which spoils overall performance. Such factors are, for example, contradictory measures, which cause confusion, performance shortfalls, bad work discipline and only God knows what else. In such a

<sup>11</sup> It is emphasised that this involves one part of building contacts, which may not be separated from the actual person!

<sup>12</sup> In 279 B.C., Pyrrhus the King of Macedonia won a costly victory against the Romans in the battle of Ausculum and he was supposed to say after the battle: “If we are victorious in one more battle with the Romans, we shall be utterly ruined!” (this is where the proverb ‘Pyrrhic victory’ comes from).

case, the actually existing asset items may fall victim to the lack of cooperation, responsibility, trust and commitment, i.e. loss-making business management results in a drop of assets. The impact of synergy on profits could be negative (destructive) for example in *bad working groups*, whether formal or ad hoc formations are involved. This may happen if the problem is raised incorrectly, if an inappropriate working method is applied, and mainly when team members are unable to cooperate with one another. Lots of examples show that – because the quality of cooperation and the resulting synergy are shaped by many factors – it is sufficient if one or more synergy carriers fall out, one or more conditions are missing, and in this case synergistic competence will indeed cease to exist or in fact turn negative.

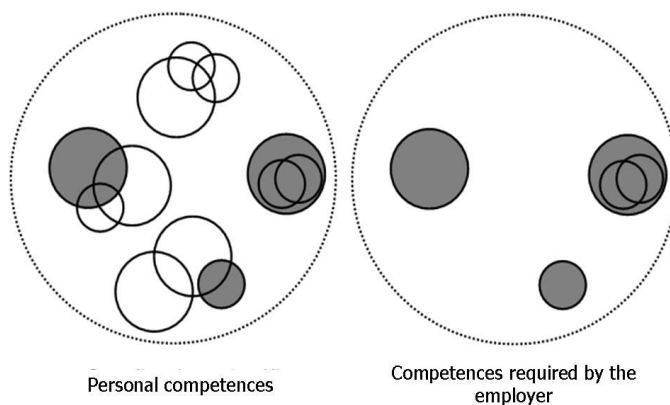
**In summary:** *In the source and application of funds statement, synergistic competence is manifest on the liabilities side and not on the assets side, through its impact made on the profits. Synergy as a value added factor increases – or reduces – the company's assets in the profit field. Therefore, synergy may have either a positive or a negative value, i.e. it may either build or demolish.*

### 3 How can the utilised competence of employees be expressed in figures?

Let us now concentrate on another element of corporate competence, the personal competence of employees!

*The utilised personal competences of employees stem from their expertise and skills. Expertise means a kind of ability, which also comprises an authorisation and eligibility to tackle tasks, and this is why it is more than an ability to resolve arising problems. Skills comprise various know-how factors, training, an expertise with experience based on hands-on training, success and failure. It is important to see clearly, however, that companies only expect employees to have the competences important for the relevant company during their employment, and they intend to acquire, develop and utilise these competences. When, for example, a company employs an associate for purchasing engineering industry components, and this person is also well-qualified for appraising and estimating the value of an antique item and in fact may also be experienced in restoring old works of art, this latter competences will not be applied by the company, and he may only use these skills in his free time, as a hobby.*

Do the competence assets of employees meet balance sheet criteria? The competences of employees could go into the balance sheet, if they had a future earning power, could be individually identified and controlled and could have an individually determined cash value. For individual assessment, in the case of certain elements of the employee competence assets of corporate competence, eligibility would be granted if we were successful in proving that they are marketable, i.e. that they are proven to have a market value.



**Fig. 1.** The personal and corporate competences of an employee

It is difficult to dispute that employee competences have an economic (business) value, and future earning power, consequently these requirements are met. The identification and availability of employees can be determined, tracked and controlled individually.

I believe that in the case of the competence assets of employees, nothing stands in the way of an individual assessment expressed in cash either! An individual value based on the market price can be assigned to the competences of employees required by the company. This is nothing else than *a salary agreed between the employee and the employer*. This is because the marketability and hence the actual market value of employee competences is proven by the fact of employment, i.e. the signing of a labour contract concluded between the employer and the employee. Salary is the market price for which an employee is willing to make his necessary and important competences available to his employer.

In a labour contract, the employer does not pay for all the personal competences of the employee, but only for the competences it requires. The future earning power of these purchased competences is the factor to which the employer requires access during the life of the labour contract, and pays in the salary the fee of making use of these competences. (Of course, this implies the full income<sup>13</sup> established during the wage bargain and its contributions, not only the legalised minimum wages, but also the other black or grey benefits which are given to the workforce via channels other than wages.)

- This is because when the agreement is reached between the employee and the employer about the salary and other benefits, this expresses an expectation from both: the employer is willing to sacrifice this amount for the competences it requires and which the employee has.
- At the same time the employee is also willing to devote these competences to increasing the revenues of the company for this agreed amount, as long as the employment relationship prevails.

<sup>13</sup>The income is understood to comprise such regular other than salary benefits, like the various cafeteria expenses, cost refunds, and training contributions.

It does not matter whether this salary is relatively high or low! The employee is able to negotiate a salary which is influenced by the supply and demand relations on the labour market. This could be a higher or lower amount than justified by the personal competence assets, but when he accepts these earnings with the given employer at the time of the agreement, this will be exactly equal with the market value of his competences. If he receives a different offer for a higher amount from a different company and is employed there, then the relevant company appreciates this competence with a higher amount. If, however, he does not find a job for years, this means that there is no such employer who needs the competences offered by him.

This is a simple and clear approach, which could bring a methodological breakthrough in evaluating corporate competence! By means of this method, the false paths followed so far can be avoided. It is not necessary to force the conventional approaches on this absolutely new type of assets that avoid any typecasting. It is not to be expected that various obstacles and contradictions will arise on the way. And, the tackling of the problem should not be overcomplicated by inventing non-transparent and in practice unmanageable methods. And no such dead end streets are required like how much the past historical value of an employee is, getting entangled into such assessment considerations like whether he attended a private kindergarten, and how much reputation is held by the university where he acquired his diplomas! And the reason why these issues are not required at all is that it is not the full personal competence of the employee which is to be determined, but only those competences will be judged and 'priced' during the wage bargain, which the company intends to use.

Of course, there can be a debate about how good this market value is, because a number of Hungarian examples show that wages agreements may be reached without any market considerations. However, it cannot be disputed that the market actors – seller and buyer – are present even in this case and by means of concluding a contract, the agreed price is accepted by both parties. Therefore, the Hungarian waging anomalies do not question the proper nature of this method, but underline the intolerable conditions in a transitional economy.

If all these factors are accepted, then we can turn our attention to handling the problem in earnest, because we must find a solution on how to determine starting from the wages how much the competences made available by each employee are worth as an asset, and how much this amount is in corporate competence. There should be a method for capitalising the individual market value of employees and for determining such part of the company's competence assets, which shows the individual competences of employees.

Hill (1994) [2] proposes the following simple procedure for considering the workforce competences to be utilised (as he calls it: determining the capital value of personal services): 'The actual capital value of your brain can be measured by the income which you produce (by selling your personal services). You can

determine this capital value by multiplying your annual income with a number given by the result of dividing one hundred with the current bank rate. In a formula:

$$\text{Capital value of personal services} = \frac{\text{Annual income} \cdot 100}{\text{central bank interest rate}}$$

By some fine tuning approaches, the method recommended by Hill can be made suitable for expressing in figures the value of employee competences. Some of the changes are justified by the immature, 'transitional' character of the Hungarian economy:

- Due to tax evasion reasons, personal income does not always appear everywhere at its full rate in Hungary, but the calculation provides valuable information only if the full actual amount is capitalised. In current Hungarian practice, personal inputs are much higher than the income, because on each forint paid to the employee, the company is burdened by a contribution payment obligation of higher than 30% among other things. When making decisions, company managers consider earnings and contributions together, and hence it is advisable to capitalise this full amount in determining employee competence.

*When determining the value of employee competence, the point of departure should be the personal inputs on the employee (earnings + contributions).*

- It seems to be a less viable path than capitalising when the discount rate is deducted from the alternative cost of capital, because such considerations as the country risk or a change in the central bank's prime rate are less important than the personal competences of the employees. But, it is also a fact that using in the assessment the prime rate of the Hungarian central bank would only be possible, if it is relatively constant<sup>14</sup> because our calculation would be very sensitively affected by even one percent of change in the interest, and if we applied in the assessment an interest rate higher than in other countries, this would heavily undervalue the Hungarian competence assets. It is my firm belief that in the assessment all those components can be left out of consideration on which neither the employer nor the employees have an influence, and they would indeed divert attention from the significant considerations of the analysis! Therefore, I think that *it is advisable to come to terms about a discount rate which is constant and could be used on a prolonged basis in the assessment*, because only in this way can many periods be compared, and hence it can be evaluated in earnest which components cause changes in the competence assets. It would be important at the same time, if this discount rate were applied by the companies across the world in an increasingly wider scope. In this case it would be possible to compare the competence assets

<sup>14</sup>Since 1990, changes in the central bank's prime rate have also indicated well the immature nature of the transitional economy. The highest rate was 28.00% between 1 February 1995 and 1 February 1996 and the lowest was 6% between 20 September 2005 and 23 August 2006.

also in an international sense. *A detailed empirical study and further research activities are needed to determine the rate, but I believe roughly an interest rate of 6-7 percent can be considered to be appropriate with a predictable capital market.*

- The expected active work hours of the workforce are not the same in the case of younger and older workers, and therefore capitalising is advisably carried out in the calculation with an age remaining until retirement. The actual and personal inputs are manifest in the annual profits as an input, and therefore capitalising must be carried out from the following year with the number of years remaining until retirement.

*The number of years expected to be spent with the organisation is to be built into the formula, which is the difference between the employee's age and the years of employment. The upper limit of the latter is represented by the expected time of retirement – currently 65 years of age – except when the employee is employed with a contract for a definite period, in which case the end of the definite service period is the upper limit. Capitalising does not comprise the value of the current year.*

As reflected by these considerations, capitalising the useful competence of employees can be carried out by means of the following formula:

$$\frac{\text{monthly wages with contributions} \times 12 \text{ month}}{r} \times \left( 1 - \frac{1}{(1+r)^{(\text{number of years spent with the organisation}-1)}} \right)$$

It is possible to make use of this formula by means of a simple spreadsheet programme in identifying the individual competence assets of company employees. The calculation can be carried out to cover all employees of the company and the obtained competence data can be kept up-to-date regarding both the responsible units within each company and the whole company. To do so, the data must be updated on an ongoing basis for each change (pay rise, salary reduction, leaving the company, recruiting a new employee, etc.).

The competence assets information updated on an ongoing basis may result in an important rearrangement in the field of management decision making. The real problems may be emphasised in performance evaluations and management decisions, because the management of competence assets puts this in the field of vision of managers.

Let us see the practical applicability of the method on the basis of an actual calculation!

The logic of calculation is that the given annual salary of the employees is featured with the actual expected value, while the wages due on the remaining years are determined with a discount rate of 7%. The company's competence assets comprise the summary of these latter individual values. It could be a matter of consideration whether in the period

spent with the organisation, the number of expected years until reaching the retirement age is calculated or – for example in the case of employees employed on the basis of a labour contract for a definite period of time – the remaining term of the definite period contract.

The magnitude is depicted well by the examples featuring in the table, where – calculating with a discount rate of 7% – an employee of 28 years of age, who would spend 37 active years with the company and including contributions his personal monthly income would be 250 thousand HUF, may contribute by 39 million forint to the company's competence, while an employee of 57 years of age with a personal cost of 800 thousand HUF would contribute 52 million forint. This shows well that in the case of the three employees featuring in the table, this represents a significant magnitude already (147.9 million Forint), that is more than eight times their annual personal input (18 million forint). The calculation is affected very sensibly by any change in the discount rate, because in the case of a change of one percentage point, using 8% instead of 7%, the competence value of the first employee would decrease from 39 to 35 million, and that of the second one from 52 million to 50 million! Therefore it has a high importance that capitalising is done at an unchanged discount rate of acceptable extent during the years.

*Of course, the model can be further fine tuned and developed, but it is certain that by such or similar capitalising methods, the contribution of employees to corporate competence can be grasped, and it is also a proper expectation that the capitalised competence profit requirement stemming from the agreed salary is met by the worker.*

#### 4 How can the value of employee competence be integrated into management accounting?

It is expected that it will take a long time until the asset portfolio consisting of employee competences can be introduced into companies' source and application of funds statement. This would be advisable if the international and national standard makers could come to terms in a fully uniformed methodology process and a set of application conditions. In this case, this asset item would be introduced into the balance sheets of all companies with an identical evaluation procedure, and hence corporate competence appearing in the assets of companies could become comparable and from the aspect of competitiveness also analysable.

*However, in the case of management accounting there are no restrictions imposed by statutory provisions, and hence it only depends on the manager's decision whether the relevant information related to competence is made part of the management reports! Therefore, it would be worth integrating as soon as possible the information about employee competence in the responsibility based management accounting manager's reports so that*

**Tab. 1.** Contribution of the employees to the corporate competence assets<sup>15</sup>

	A	B	C	D	E	F
1 Name	Employee 1	Employee 2	Employee 3	...		Total
2 Monthly income + contributions	250000	800000	460000	...		1510000
3 Age	28	57	45	...		
4 Retirement age	65	65	65	...		
5 Number of years with organisation	37	8	20	...		
6 Discount rate	7%	7%	7%	...		
7 Annual wages + contributions	3 000 000	9 600 000	5 520 000	...		18 120 000
8 Employee's worth with the company	39 105 623	51 737 178	57 052 486	...		147 895 287

when making decisions the managers could rely on these and also on the very important efficiency and cost return indicators generated therefrom.

Down below, through a simplified numerical example, let us consider what extra information could be obtained by unit managers within the company about the efficiency of business management!

In this example, we calculate with the following: for durable assets, the requirement is the compensating of annual amortisation, and in the case of competence assets, the requirement is a yield of 8.5%<sup>16</sup>. Let us assume that a company has three business branches of different portfolios, and each of them accomplishes business profits of 100 million HUF. We know that the performance behind seemingly identical profits can only be assessed by taking into consideration the magnitude of invested assets. In the three units, the size of conventional asset items (the invested and current assets used during operation) is 1000, 500 and 100 million. Therefore, the rate of return will be 10% in the case of the first, 20% in the case of the second and 100% in the case of the third. However, this approach leaves outside the field of vision of managers how much competence assets were tied down by each unit during their operations. Let us assume that these competence assets amount to 1200, 800 and 1300 million. Now, in the rate of return in the denominator the competence elements may also be taken into consideration in addition to the visible asset items. The so calculated 'complex rates of return' indeed reevaluate the assessment of the outputs of the three business units. However, an even more complete picture is

obtained if the data of the head office are taken into consideration *per se*, without 'spreading' the losses of the head office among the three business sectors.

As proven by the figures in Table 2, business sector B is the most successful out of the three business units, because return on the full assets after investment is the highest there. But, these data can be evaluated appropriately only when the actual figures are compared with the demand on the rate of return, regarding both the conventional and the competence assets elements.

It can be seen that in the whole company, a lacking profit of 359.5 million forint can be shown behind the seemingly good profits, and this has been contributed to in a smaller or larger extent by all units except for unit B! Business sector A is lagging behind the profit requirement expected on the asset portfolio tied up by it by 82 million forint, and business sector C by 13.5 million. It can also be seen that this gap is due to the underperformance of the profit expectation of the competence assets, while the units meet the profit demand of conventional asset items! This is an important extra information, because the numbers show unambiguously that lacking profit does not come from the unused nature of conventional asset items tied up, but depends on human factors. This information will finally draw attention to the importance of business management in the case of competence assets and meet the conditions for making sure that the managers of all units can indeed make decisions that may result in proper performance improvement!

Let us dwell on some possible reasons why more than one unit is unable to generate the minimum expected profits justified by the employee competence assets tied up by them?

– There are cases when in the case of jobs – primarily strategic

<sup>15</sup>For example, in the table the following formula is associated with cell B8 :=  $\frac{B2 \times 12}{B6} \left(1 - \frac{1}{(1+B6)^{B4-B3-1}}\right)$

<sup>16</sup>At the time of writing this book, the prevailing prime rate of the central bank is 8.5%, which can be taken into calculation as a minimum expected profit. It is worth noting, however, that researchers dealing with competence assets agree without exception that this is the specific resource which is unconditionally able to provide a return much higher than the yield on bank deposits!



**Tab. 2.** Appearance of competence assets in the management accounting information

Description	unit: million forint				
	A	B	C	Head office	Company
1. Business profits	100	100	100	-60	240
2. Conventional assets tied down for operations	1000	500	100	1200	2800
3. Rate of return (1/2)	10%	20%	100%	-5%	9%
4. Competence assets	1200	800	1300	2000	5300
5. Rate of return calculated for the full tied down assets (1/2 + 3)	4.5%	7.7%	7.1%	-1.9%	3.0%
6. Percentage of expected profit on the conventional assets portfolio	8%	6%	3%	3%	5%
7. Expected profit in value on the conventional assets portfolio (2 × 6)	80	30	3	36	149
8. Expected profit in percentage on the competence assets portfolio	8.5%	8.5%	8.5%	8.5%	8.5%
9. Expected profit in value on the competence assets portfolio (4 × 8)	102	68	110.5	170	450.5
10. Lagging behind the expected profit vis-à-vis all assets [1 – (7 + 9)]	-82	2	-13.5	-266	-359.5

jobs – the *competence readiness standard*<sup>17</sup> lags behind the required level. To throw a light on this situation, first of all we need to identify in the course of profiling the strategic jobs and competences the desired knowledge level, professional expertise and value expectations. If the competence readiness standard is lower than expected, the *critical points* are to be revealed. Absolute critical points can be the competences which are met at an unacceptably low standard vis-à-vis the similar issues of competitors. Falling into the same range are the lacking, unnecessary or detrimental competences in accomplishing the strategic goals. Relatively critical points are those strategic expectations, in the light of which the importance, performance standard and cost of certain competences are not in proportion. Such are, for example, the underperformed or unnecessarily overperformed or overly costly competences. On the basis of the result of analysing the readiness level, the tasks aimed at improving the competence readiness level can surely be identified. It can be determined where it is possible and worth increasing the existing competence standard even at the cost of extra inputs, while the competence inspection embedded into strategic objectives is able to provide guidance on how many sacrifices the company is allowed to make in order to do so.

- When competences are available at the appropriate standard, this creates a condition for successful asset management, but this is not a guarantee in itself that it will be implemented! A reason for wrong performance expectation could be also if the managers *badly manage the employee competence assets tied up with them*. For example, they may not or only on a low efficiency basis utilise these assets or on the contrary they want to deplete and ‘rob’ these assets very quickly or with an excessive intensity before it would be the proper time to do so.

<sup>17</sup>The competence readiness level gives an answer to the question of what ratio of employees in strategic jobs have the necessary competence profile. If, for example, there are 100 strategic jobs at a company and of the employees currently working in these jobs, 40 have the necessary competence profile, the readiness standard is 40%.

- There could be such a false management approach behind the underperformance which gives priority to *cost saving considerations* and does not invest enough in competence assets. Although – especially in ‘*crisis periods – exactly the investment in competence is the most profitable form of investment*’! [5] The companies successfully staying afloat in a crisis indeed offer an example that in such cases the desirable company therapy is not the forcing of assets investments, but – in order to ensure more profitable company operations – *the development and maintaining of competence assets*.
- The reason for underperformance could be the fact that *employees show no interest or they are unmotivated*, if they do not see a perspective for themselves at the office, if their managers do not rely on their skills and experience, and if they do not have a chance at the office for development and self-realisation.

The reasons listed so far stem from the inappropriate utilisation of the employees’ competence assets. We should not forget, however, that synergy competence should also be manifest in the profits of various units. Nevertheless, lagging behind the minimum expectation also points out that synergy competence has not provided a plus. Quite the contrary! It can easily happen that the lack of cooperation and perhaps hindering one another’s efforts are behind the individual underperformance!

It can be seen that finding the reasons can lead us very far. By revealing and eliminating any reason for deteriorating the performance gives us a chance for intervening in earnest, which can then generate favourable changes in the improvement of individual outputs, at the same time possibly strengthening positive synergies, which will make a favourable influence also on the aggregate output.

#### 4.1 How could corporate competence be integrated in the financial accounting balance sheet?

Corporate competence can be introduced with a value into the source and application of funds statement of companies, if the international and national standard setters could come to terms about a completely unified methodology procedure and a set of

conditions for application. In this case, this asset item could be introduced into the balance sheet of all companies with an identical assessment procedure, and therefore the corporate competence appearing in the assets of companies could become comparable and from the aspect of competitiveness also analysable.

The appearance of competence assets in the assets of the balance sheet is principally possible as identified by the capitalising procedure demonstrated above and expressed in figures from the individual market values of employees, because this is not contrary to the requirements of drawing up a balance sheet. It has a future earning power, and its value expressed in cash can be determined individually, because it is proven that it has a market value and individual identification and control are also possible.

How could competence be placed into the balance sheet?

- It is obvious that it should be listed on the assets side, among the long-term (durable) invested assets, and due to its character it should be listed as an independent group of intangibles.
- On the *liabilities side*, a significant characteristic of competence assets must be taken into consideration, namely that it is not owned by the company and it may not appropriate, in fact only utilise these assets. Each of the physical asset items is characterised by the fact that they can be possessed: they can be purchased from others, could be owned after paying for them in cash, may be stolen, acquired, or taken by force. A human resource in the traditional sense may also be possessed, if a man's physical power is intended to be owned. In slaveholding societies or in the working camps of the 20<sup>th</sup> century, those having the power to do so had the possibility to deprive people of their freedom and – merely in exchange for staying alive – made them work in forced labour until their last breath. They could do this because it was easy to track and control physical performance. Those who did not meet the norm were heavily punished and those who were not willing or able to work were liquidated ruthlessly, creating a deterring example for others. The gaining ground of competence assets puts us in a new situation. The earlier expropriation methods are doomed to failure. The competence assets and within those, for example the thoughts and feelings of a man cannot be subjected to forced labour, if for no other reason because a person who is unable to read or write will not be able to do so even under any duress.

*Corporate level competence assets are tied to humans: it is an imminent character of the individual, which cannot be separated from its owner and therefore it cannot be sold or given away and may only be expropriated in a very narrow range.* This part of the assets is not a property of the company or of the company shareholders. Although it is worth a fortune, we cannot lock it in a safe, and 'walking' company assets may decide to leave any time, going over to the competitor, and causing huge damage.

Competence assets are rarely owned by a company, but rather by the people working there. Therefore, the corporate level competence assets available to businesses and a large part of the

profit coming therefrom is not represented by internal, but by *external funds*.

There are liabilities among the external funds, but the source of corporate competence cannot be squeezed into these categories! The assessment based on market value and the ongoing annual review of this market value raises the issue of using other funds institutionalised in Hungarian accounting regulations, namely that of the valuation reserves.

The institution of valuation reserves was called to life by the circumstance that there are certain assets in the case of which the market value could be much higher than the book value.<sup>18</sup> Therefore, the Hungarian accounting regulations enable in the case of some asset items<sup>19</sup> to perform the assessment at the market value and in case the market value is higher than the book value of the asset item, a revaluation is permitted.

However, this revaluation may not have an impact on the profits and therefore the changes in value due to the market value must be offset against the valuation reserves on the liabilities side. Accordingly, the valuation reserves are internal funds, the amount of which is equal with the value adjustment. The identified value difference is not qualified as a useful input, consequently it does not become an element of the purchase value, it cannot be amortised, and it is not qualified as an income either. In such a way the market assessment does not make an impact on the income situation of the business<sup>20</sup>. Therefore, revaluation only has an informative/technical significance, it details the realistic picture about the business, and increases the amount of equity.

The change in the market value must be followed in preparing the balance sheet, which means in practice the modification of value adjustment and valuation reserves. The correct values of market assessment and adjustments must be checked by an auditor.

The established procedure of market assessment can be applied also in the case of competence assets, with the difference that the adjustment of an existing historical value would not appear on the assets side, but a 'Competence' category calculated at a market value would be introduced in the intangibles, while on the liabilities side the competence reserves should appear as

<sup>18</sup>Using a very precise definition, we could say: if the market value of an asset is significantly higher than the book value calculated after reversal (the so-called calculated net value), the assets could be shown in the books also at a market value. The difference between the calculated net value and the market value must be shown as a value adjustment in the assets, and as valuation reserves of the same amount among the liabilities. This assessment, however, does not modify the profits shown in the statement.

<sup>19</sup>It is possible to make a market assessment – and if the market value is higher than the book value then a *revaluation* – in the range of intangibles, regarding rights of a property value and intellectual properties, within the scope of tangible assets regarding real estate properties, rights of a property value associated with real estate properties, technical machinery, other equipment, breeding animals and within the scope of invested financial assets in long term (durable) assets.

<sup>20</sup>This method is able to demonstrate a change in the assets situation, but it does not have an impact on the profits.

the funds for this asset item, and this would work on the basis of a similar principle than the valuation reserves within the equity category.

The changes occurring in the amount of competence assets could be offset against each other in the two charts of accounts according to the following:

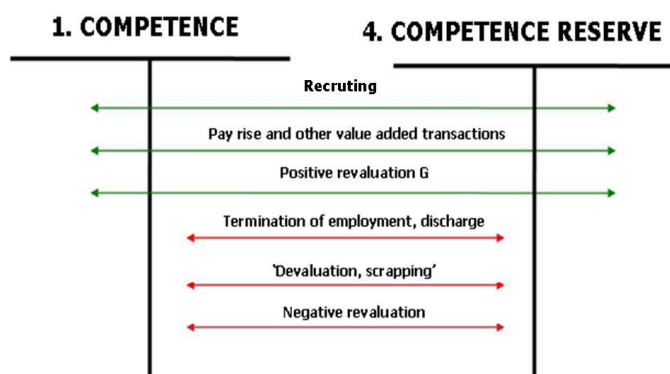


Fig. 2. Handling of competence accounts

And now there is nothing else left than to show the source and application of balance sheet supplemented with the competence categories:

Tab. 3. Showing competence on the assets and liabilities sides of the balance sheet

Assets		Liabilities	
<b>A. Invested assets</b>		<b>D. Equity</b>	
I. Intangible assets		I. Issued capital stock	
II. Competence		II. Issued, but unpaid capital stock	
III. Tangible assets		III. Capital reserve	
IV. Invested financial assets		IV. Accumulated profit reserve	
<b>B. Current assets</b>		V. Retained earnings	
I. Stocks		VI. Valuation reserves	
II. Receivables		VII. Balance sheet profits	
III. Securities		<b>E competence assessment reserves</b>	
IV. Liquid assets		<b>F. Provisions</b>	
<b>C. Accrued and deferred assets</b>		<b>G. Liabilities</b>	
		I. Subordinated liabilities	
		II. Long-term liabilities	
		III. Short-term liabilities	
		<b>H. Accrued and deferred liabilities</b>	
<b>Assets total</b>		<b>Liabilities total</b>	

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