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Volker Stein*

Human Capital Management: The German Way**

The German discourse on Human Capital Management (HCM) has a long history which resulted in the manifoldness of notions connected with HCM. The exact specification of the meaning of HCM basically depends on the frame of reference used: the frame of the past, of the present or of the future. The present article which concentrates on the German aspects of the HCM debate is aimed at systematizing this discourse by outlining the past and present HCM development in Germany as well as its future perspectives. It will result in a synoptic view, summing up the German state-of-the-art HCM.

Key words: **Human Capital Management, Discourse Analysis**

* Univ.-Prof. Dr. Volker Stein, Professor of Business Administration: Human Resource Management and Organizational Behavior, University of Siegen, Germany. E-mail: volker.stein@uni-siegen.de.

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1. Introduction

1.1 Topicality

In Germany, corporate Human Capital Management (HCM) is gaining growing relevance in strategic HRM as a systematic instrument to analyze and improve HRM quality and performance. Especially the monetary value of the corporate human capital serves as an important lead indicator in several economic contexts. In etymological terms, human capital is derived from macroeconomics but was later transferred to the field of business administration and management (e.g., Ortner 1982). The economic theory of human capital which assumes competencies, skills, and knowledge to be a precondition for economically usable behavior and obtainable income (e.g., Schultz 1961; 1971; Becker 1962; 1964; Correa 1962) is the foundation of the corporate human capital discussion.

Some of the basic HCM rationales have an internationally universalistic (e.g., Hampden-Turner/Trompenaars 1993) character. In this sense, it is broadly accepted in strategic HRM that people decisively contribute to corporate success (e.g., Pfeffer 1994; Hitt et al. 2001) – and so does HRM (e.g., Pfeffer 1995; Ulrich 1997). Internationally, these contributions are experiencing an ever growing number of empirical evidence (e.g., Huselid 1995; Wimalasiri 1995; Delaney/Huselid 1996; Becker/Huselid 1998; Barrette/Ouellette 2000). Accordingly, in HCM human resources are perceived as a specific sort of intellectual capital (e.g., Edvinsson/Malone 1997) and HRM as an investment into this capital. In analogy to financial capital, two general research lines have been developed. The first specifies the driving HR forces of corporate success. It results in a number of key performance indicators and performance drivers like annual training hours or the degree of variable payment (e.g., Becker/Huselid/Ulrich 2001) which are able to leverage HRM efforts. HCM in this view is seen as the description, combination and regulation of key performance indicators. The second research line connects HRM performance with company value. If excellent HRM increases corporate performance, it should be possible to identify the directly induced influences on the corporate value (e.g., Fitz-enz 2000; Chartered Institute of Personnel and Development 2006; Human Capital Institute 2006). In this respect, HCM is seen as monetary assessment of investment decisions in human capital, based on a clear measurement of the human capital.

However, this article follows a more particularistic explanatory approach and therefore concentrates on the German aspects of the HCM debate. The reason is that HCM is a strongly culture-bound issue in the context of a nation-specific conception of HRM. Contingent on country-specific conditions, during the evolution of HCM systems different theoretical roots are predominant, various economic trends and legal systems have influenced the respective HCM developments, and academia as well as practice has set different culturally influenced priorities in their culture-bound discourse. The first culture-bound issue is the basic approach of HRM:

- The prevalent US-American focus on strategic HRM (e.g., Fombrun/Tichy/DeVanna 1984; Schuler/Jackson 1999) aims at the extensive consideration of the needs of internal and external stakeholders also by the human resources function. Employees are addressed as a driving force for corporate success.

Therefore, HCM in the USA (e.g., Fitz-enz 2000; Human Capital Institute 2006) aims at actively advancing those individual employees who especially contribute to value creation and to cultural development and who are ready to balance verifiable individual performance and appropriate compensation on a high level.

- In the UK, a “hard” type of HRM can be found, concentrating on systems which optimize the operation of the people factor. Rather rationally considering market conditions as well as cost calculations (e.g., Hendry/Pettigrew 1992; Legge 1995), it fosters the stringent integration of HR processes, systems, and activities in order to reach the organizational objectives (e.g. Sparrow/Hiltrop 1994). HCM in the UK therefore tends to concentrate on process-oriented optimization of human resources (e.g., Chartered Institute of Personnel and Development 2006).
- The German HRM, as to its strategic orientation, resembles the American HRM, but exceeds the latter in its role as a general planning function (e.g., Scholz 1982; Wunderer 1992) in a specific and historically grown employee protection and participation context (e.g., Conrad/Pieper 1990; Niedenhoff 2005). German HRM is explicitly orientated to behavioral and psychological issues which it brings together with the economic requirements of the company (e.g., Scholz 2000a; Berthel/Becker 2003; Drumm 2005). Therefore, German HCM tends to take a broad, corporate-wide and often cost-oriented perspective.

The most striking observation is that the topic of HCM does not appear to be a major topic of debate in the Anglo-American HRM literature. For example, the recently published “Oxford Handbook of Human Resource Management” (e.g., Boxall/Purcell/Wright 2007) does not contain a chapter on the topic of human capital. The number of HCM articles between 2001 and 2005 in HRM journals (in the German “Personal”: 13 articles; in the American “Human Resource Management”: 1 article) as well as in controlling journals (in the German “Controller Magazin”: 12 articles; in the American “The Accounting Review”: 1 article) strongly supports this observation. Again, there are culture-bound reasons for this observation: First, the relevance of immaterial assets has increased in Germany as the country runs short of highly-qualified staff and the “war for talents” becomes an urging problem (e.g., Oelsnitz/Stein/Hahmann 2007). This causes a need for appropriate internal controlling systems for knowledge capital which prevent unnoticed shortages. Second, Germany shows higher scores on Hofstede’s (1980, 315) uncertainty avoidance dimension than Great Britain and the USA which explains the German controlling orientation in HRM, too. Third, while the regulations of the Basel Accord which include the supervision of corporate management and HRM quality as part of a risk-related scoring are already effective in the European Union since January 2007, implementation of the accord for US banks is delayed by two years. The Basel Account increases the pressure to provide a substantial HCM in Europe and Germany.

There seem to be enough reasons to justify the identification of a specific “German way” of HCM and to concentrate on it. The exact specification of the meaning of HCM in Germany, however, depends on which HCM frame is referred to: the frame of the past, present or of the future.

1.2 Objective

The objective of the present contribution is to describe the past and present development of HCM in Germany as well as to outline its future perspectives and by this, at the same time, to give the reader an insight into the current German HCM discussion. Up to now, a synoptic view on the German HCM debate is widely missing.

The underlying intention is orientated to academic publications like the “Academy of Management Review” which explicitly encourages comprehensive literature reviews and contributions which significantly clarify existing theory. Moreover, “authors (...) should explicitly discuss the implications of their ideas for the present and future actions of individuals, our profession, firms, and/or nations” (S.E.J. 1994, 9). Therefore, the future aspects of HCM will be integrated in the present contribution. They are explicitly titled as “trends” to signalize their prospective character. Nevertheless, this section contains fundamental aspects from the discussion on the resource-based view which has already begun in organizational theory. These aspects are transferred to HCM in the sense of a proactive, future-relevant forethought. Some future questions treated here are, however, already asked today, partly quite provocatively by opponents of the human capital valuation. Since they imply that the German HCM field does not even have any idea on how to answer the questions, it is therefore considered important to mark a conceivable line of argumentation.

Readers from the German HR community might benefit from the synoptic view which structures, sorts, and sums up the German HCM discourse. Readers from the international HR community might use the contribution as basis for a comparison of international HCM systems (which is not aimed to draw here) and thus receive impulses for further discussion.

1.3 Method

This contribution is a literature analysis, predominantly concentrating on German HR literature. This is not to consciously neglect the international debate and its progress, but to acknowledge the manifoldness of the German discussion.

From a methodological point of view, it uses a set of eight lead questions which cover the main aspects required to understand the different stages of HCM development. These lead questions resume the idea of multiperspectivity in management research (e.g., Morgan 1986; Scholz 2000b) which suggests that it is vital to view organizational phenomena through multiple images. While questions (1) to (3) serve to define HCM, questions (4) and (5) take the strategic way of thinking and seeing HCM. Question (6) approaches HCM in cultural terms, while question (7) analyzes aspects of the political power and domination system. Question (8), finally, covers the organizational learning aspect. The eight questions are the following:

1. *Which are the underlying theories?* The theoretical roots are essential to understand the way of HCM thinking.
2. *Which is the valuation logic of HCM and the respective prevalent HCM definition?* The valuation logic tries to reveal the basic intention of the measurement of human capital and is summed up in the HCM definition.

3. *Which are the predominant HCM approaches as well as recent derivatives?* These HCM approaches, representing the German main proponents, allow for a closer look on their characteristic design.
4. *Which are the expected benefits of HCM?* Here, the scope of action recommendations based on the respective HCM approach will be shown.
5. *Which are the application-oriented restrictions of HCM in a developmental stage?* What are their limitations?
6. *Which HCM culture can be observed?* The fit between a cultural predisposition and the HCM approach will be assessed.
7. *Which status has HCM within the corporate system?* This question asks for the influence of HCM and of HRM in the corporate political decision context.
8. *Which learning approach is adequate to the HCM system?* Different learning necessities might be connected with HCM in different developmental stages.

This analysis, to be systematized along these lead questions, will result in a synoptical grid on HCM in Germany.

2. The past

2.1 Underlying theory

In the past of German HCM, two basic theories dominated the emerging discussion around HCM. Widely independent from each other, they represented real alternatives: the market-based HCM view *or* the resource-based HCM view.

The market-based view describes how a firm can build a competitive advantage and develop a competitive strategy (e.g., Porter 1980). Based on the assumption that resources are homogenous and mobile, a company tries to manage the broad range of strategic planning in a way that it will gain sustainable competitive advantages on the product market. HRM as an internal function is subsequent to the externally oriented market strategy. In this view, employees are supposed to generate corporate revenues on the product market and, a high return is an indicator for an efficient workforce. The resource-based view on the other hand points out that the sustained competitive advantage of a company grows as a result of applying the bundle of valuable resources which therefore have to be heterogeneous and not perfectly mobile, neither imitable nor substitutable without major effort (e.g., Wernerfelt 1984; Barney 1991). Human resources can be transformed into such valuable resources by strengthening core competencies of the employees.

In Germany, the resource-based view had a very early predecessor in the factors of production (e.g., Gutenberg 1951, 2-3): In the related theory, personnel or human resources are seen as one of the productive factors of a company, coequal to land and financial capital. Related to human capital, Schoenfeld (1974) arranges the corporate assets and makes the problems of measurement and valuation apparent especially for human capital. Perceiving employees as a factor of production, theory and practice adapted the American ideas of Human Resource Accounting (e.g., Flamholtz 1973) in the middle of the 1970s. At this time, a first significant discussion about HCM took place in Germany. The objective of the related approaches was to disclose the value of the workforce by considering the costs of these resources. At the same time, the human relations program became very influential in Germany. Under the label of “Hu-

manisierung der Arbeit" (i.e., humanization of labor; e.g., Vetter 1974) it stressed that employees made their resources available to the companies but should in return gain a more mattering role in companies and economy. The explicit emergence of the resource-based view in the 1990s led to the renaissance of the concept of intellectual capital, where immaterial resources were more and more accepted as drivers of corporate success and where human capital took over the central role. Behavioral components of HRM like, for example, coaching or managing diversity, have been seen as important factors on the value of a workforce. As a reaction to the international discussion in the middle of the 1990s on the categorization of "intangibles" (e.g., Stewart 1997; Sveiby 1997), the encompassing categorizations were even extended in Germany (e.g., Arbeitskreis "Immaterielle Werte im Rechnungswesen" der Schmalenbach-Gesellschaft für Betriebswirtschaft e.V. 2001). In 2004, a German journal "Das Personalvermögen" was explicitly dedicated to "human resources as corporate assets".

The market-based view, however, took a different perspective. Since the capital markets gained importance in the 1980s as an efficient indicator for the success of corporate policies, competitiveness and profitability on the product markets were given priority. The idea of strategic controlling was broadened to HR processes and to employees. HCM was more and more seen as an enlargement of HRM aimed at contributing to corporate success and at planning as well as controlling the employees' value contribution.

2.2 Valuation logic and prevalent definition

In the resource-based view, the original logic underlying HCM valuation is cost accounting. Adopting the American Human Resource Accounting (e.g., Flamholtz 1973) in Germany (e.g., Dierkes/Bauer 1973; Schmidt 1975; Weiermair 1976), human capital is primarily valued according to the input costs. Accordingly, the human capital rises if the pure sum of monetary investments into the workforce increases. In the resource-based view, human capital is the value of a workforce, while accounting is the related instrument of measuring the costs and valuating the capitalizable human assets (e.g., Schmidt 1982, 6). HCM therefore is the input-related activity of measuring and influencing the costs of gaining and retaining a workforce as well as the costs of further investments which are relevant for human capital like job design improvement and work condition optimization.

In the market-based view, the valuation logic of HCM is the distribution of surplus. The value of employees is determined by the output which they generate. Accordingly, the human capital value rises as a result of those parts of the actual or expected future cash-flow which have not yet been ascribed to non-personnel performance drivers like e.g. the financial capital. The value of employees depends on the revenues which the company obtains on the product market. In the market-based view, HCM therefore is the output-related activity to measure profits on the product market and distribute them to single employees or work teams according to their contribution to overall success.

2.3 Predominant approaches and recent derivatives

The resource-based HCM approaches which focus on the cost accounting logic try to integrate the human capital measurement into the traditional accounting and balancing

systems and therefore, e.g., do consider depreciation. Based on Human Resource Accounting, the derived German approaches (“Humanvermögensrechnung”, i.e. human asset valuation) foster the analogy of human capital and costs. One of the advantages is that human capital can be comprehensibly imaged as an investment account where the personnel costs play the most important role for the substantiation of human capital.

The original Human Resource Accounting has two components: Cost accounting measures all personnel costs like those to be incurred for employee acquisition, personnel development, fluctuation, and replacement of an employee, whereas value accounting determines the economic value of the workforce for the company by aggregating it from individual or team level. In Germany, especially the cost concept has been enlarged: In comparison to other countries, the specific industrial relations in Germany forced companies to pay higher fringe benefits which are as nonwage labor costs also considered investments in human capital. Moreover, influencing the quality of work conditions and subjective social indicators (e.g., Schmidt 1982) assessed in staff opinion surveys is increasing human capital costs. The result of the cost accounting approach is a monetary value for workforce in order to support preservation and augmentation of the human capital (e.g., Schoenfeld 1993).

Similar approaches measure the value of human capital by the discounted personnel costs of the coming years (e.g., Siegert 1999). Other resource-based HCM approaches do not involve measuring monetary values at all, but focus on HR indicators instead. They collect a broad range of indicators which are more or less connected with employee characteristics or corporate performance. As the sets of indicators can be chosen deliberately, the broad range of proposals in Germany like various knowledge balance sheets (e.g., Maul 2000; Lingemann 2001; Gloth 2003), index systems on employee characteristics or company characteristics (e.g., Friederichs 1998; Esselborn/Henke 2001; Mohr/Keilholz, 2001; Kötter 2006), or a summary model with over 1,000 indicators on human capital value drivers (e.g., Wucknitz 2002) are not able to compare the results among each other. They are rather suitable for internal purposes of firms. Aiming at isolated HR effectiveness indicators which are easily available, their merit is that they have created the general awareness for the necessity to deal with intangible assets.

Again different, the market-based HRM approaches focus on the market value of companies, trying to assess human capital by drawing on the market value, the book value, and the number of employees. Approximations like the difference between current market value and book value or the relation between market value and book value (e.g., Stewart 1997, 224-225) turned out to be too rough estimations. In Germany, Simon (2000) suggested just to divide the stock market value of a company by its employees to receive the human capital. However, this became problematic when some companies which were very successful during the New Economy had to declare themselves insolvent: Their human capital according to this suggestion fell from over a million Euro per capita to zero within a very short time – with the identical workforce.

Market-based approaches which focus on the added value or directly on the market returns try to link human capital to the surplus caused by employees. In Germany, examples for this approach are the valuation of the corporate knowledge capital (e.g., Strassmann 1999), or Workonomics measuring the surplus profits per employee (e.g.,

Strack/Franke/Dertnig 2000; Strack 2002). They are based on information delivered by the accounting function and relatively easy to calculate because human capital is mostly a difference between output and input. Nevertheless, it is a rough and problematic indicator in the HRM context because it is based on product market sales.

The Human Capital Pricing Model (e.g., Bender/Röhling 2001) applies parts of the capital market theory on human capital and especially highlights the risk components of investments in human capital. However, they are partly very theoretical or do not exceed indicator-based approaches far enough. As part of an extended balanced scorecard, Schmeisser et al. (2006, 91-109) combine in their potential-oriented perspective the measurement approaches of human resource accounting and cash-flow distribution on employee level, but without explaining how the inherent methodological limitations can be overcome in practice.

2.4 *Expected benefits*

With the cost accounting logic and the respective resource-based HCM approaches, a lot of benefit expectations were connected (e.g., Schmidt 1982): The first expectation was that it would contribute to an exact HR planning and especially an exact HR cost planning. The second expectation was that the personnel policy would be impacted because the process of dismissals and acquisitions of employees became visibly cost effective; an anticipatory planning or a substitution of dismissals by short-time work could reduce these costs. The third expectation was that also absenteeism costs as well as costs of humanization of the working life could be made transparent so that related investments in social work systems could be balanced by the reduction of productivity losses. By this, human capital accounting was already introduced as a management instrument to substantiate corporate social responsibility which has gained early importance in the German system of “social market economy” (e.g., Zinn 1992). The results of such human capital accountings were expected to be integrated in corporate socio-economic accounting (“Sozialbilanz”).

In fact, cost accounting approaches were the first to raise awareness for the management of people as corporate potentials (e.g., Bartscher/Steinmann 1990, 400). By following the methods and regulations of accounting and balancing, the communication of the general idea of human capital valuation has been facilitated which supported its reception by internal as well as external addressees (e.g., Bontis et al. 1999, 394).

The expected benefits connected with the market-based HCM approaches were to answer questions which are closely related to the value proposition of HRM as a strategic function: Is HRM delivering value to the company? Which are the key drivers of HRM performance? How is HRM impacting business performance through HR strategy? Where should HRM focus its efforts to support business functions in achieving strategic goals? How can HRM demonstrate to internal clients as well as to the management that it is actively generating value for the company? Is the HR strategy really aligned with the corporate business strategy? And how can HRM communicate the value it is delivering within and outside the company? By answering these questions, HCM would not only be dedicated to a finance-oriented measurement of human resources but also to a communication strategy. A further, but different benefit expectation resulted from the fact that the instruments underlying such an HCM were

well-experienced in finance-oriented management consultancies. They expected to find an attractive business model with almost no market entry barriers for them where they could exploit their existing knowledge once again on a different market.

However, for both views, the expected benefits could not be achieved entirely, as the following section will show.

2.5 Application-oriented limitations

In their application, the resource-based approaches did not deliver on their promises. Marr (1982) criticizes that it is not possible to derive statements from the pure costs about the value of human capital. He also sees the measurement of depreciation of human capital as unsolved. He suspects that the expectations would be revealed as “methodological dead ends” (Marr 1982, 51), with the approaches in the end not only failing as basis of decision-making, but also lacking employee acceptance. Other critics focus on the lack of exact valuation procedures and criteria or on the orientation to the past (e.g., Fischer-Winkelmann/Hohl 1982), on the quasi-accuracy in spite of the given complexity of human resources (e.g., Kiehn 1996) and on the missing consideration of social indicators like retention or the ability to work in a team (e.g., Lawler 1973).

In contemporary practice it turns out that the significance of the calculated results of a cost accounting HCM is mostly given if HCM is perceived a part of the controlling function and in it as a means for the reduction of personnel costs. Therefore, a cost accounting method usually and almost automatically leads to cost-cutting and dismissals.

The surplus distribution logic based on the present or future utility of an employee or of a workforce for the company is very difficult to realize (e.g., Schmidt 1982, 6). The first problem is that any returns which are projected into the future and then are discounted are by no means free from manipulation – all the more so because for human resources a long-term (or even hypothetically infinite) right of disposition such as holds true for the material goods and properties of the firm cannot automatically be assumed. The second problem is the effect that any occasional sales fluctuation on the product market, independent of the reasons, immediately changes the human capital although the identical staff is employed in the company. An oil crisis or a change in customer preferences could lower the human capital value just because the revenues are decreasing even if the employees have not changed at all. The third problem is the arbitrariness resulting from the missing prescriptions for the separation and attribution of the surplus to different forms of corporate capital. It is almost impossible to isolate the surplus contributions of single production factors: Virtually, among other factors, the forecasts of the stochastic future performance development would have to be available for every employee and the future HRM activities would have to be anticipated (e.g., Rumpf 1978, 455). Therefore, against the background of internal HRM accuracy and fairness considerations, human capital valuation based on the surplus distribution logic is evidently arbitrary and can be manipulated in order to reach favored results. The fourth problem is that the measurement of human capital according to the surplus distribution logic would result in a negative human capital if the company would experience a financial loss which remains elusive for the employees or the work council. The fifth problem occurs while using the human capital value for

correlations with revenues. The correlation will always be positive (“the more human capital, the more revenues”) because the surplus distribution logic defines human capital by the revenues. Contrary to the belief of Marschlich/Menninger (2007, 47), a positive (but tautological) correlation coefficient is not at all an indicator for the human capital valuation quality.

Summing it up, the application of the surplus distribution logic is not only misleading and dysfunctional for companies, but also ineffective because it requires a lot of valuation work for only very limited essence. In practice, it turns out that finance-oriented approaches following the surplus distribution logic have very narrow limits of use: Their application seems only possible where a company fulfills a homogeneous task, consists almost of one single type of jobs and where the revenues can be distributed equally on all employees without any reason for differentiations. This is the case e.g. in call-centers where a homogenous workforce is given and the allocatability of returns can be immunized against micro-political preferences and power issues.

2.6 HCM culture

From its very beginning onwards, HCM has been in the center of a broad ethical discussion about whether the management criterion of productivity can be the normative standard in the field of people. The German trade unions criticize that human capital accounting approaches follow the underlying premise that labor is treated like a good or like financial capital and therefore the criterion “augmentation of corporate productivity” is predominant. By this, human capital accounting becomes an instrument of the company’s, but not of employees’ interests. The related fear is that already existing problems in the labor system would still be increased by a further concentration on capital rentability, work productivity, and division of labor (e.g., Engelen-Kefer 1982). The trade unions feel the need of a stronger participation of the employees and their representatives in the definition of social costs and revenues in the context of corporate HCM.

The Gesellschaft für deutsche Sprache e.V. (Society for German Language) has elected human capital “the ugliest word of the year 2004”: The wording would not only degrade employees in companies, but all people to be not more than economically interesting variables. By its selection, the Society for German Language expressed ethical objections of workers who do not accept to be reduced to a material-like human capital which can be planned, regulated and controlled. In the meaning of the term capital lies the comprehension of employees to be at the company’s disposition which leaves the essential qualifications and competencies unappreciated (e.g., Zapke-Schauer 2005). Sometimes, human capital even provokes the notion of slavery (e.g., Zucker 2005), a situation where people as a matter of fact were capital, had a price, and were traded like goods.

Nevertheless, the original intention of these past HCM approaches was oriented towards the social responsibility of companies: Investments in human capital should be made even if they do not result in a direct increase of productivity for the company but prevent negative situations of individuals or of society (e.g., Schmidt 1982, 5). This idea addressed the insight that the synthesis of corporate and social productivity awareness could increase the effectiveness of corporate decisions. But in the past, at

least the large German companies did not follow this path, as their recent mass dismissals strongly indicate that they mainly follow shareholder value interests. German middle-sized companies mostly behave differently – but up to now have not been too much affected by HCM.

Summing it up, for both basic logics can be stated: An accounting person or financial person is concerned with taking money out of the organization, while HR should perceive itself to be concerned with putting investments in. In both HCM logics, either valuating human capital with an input-orientation or with an output-orientation, the predominant culture is in fact unbalanced, favoring the companies.

2.7 Corporate status

According to “past” approaches, HCM was (and still is) performed under the dominating influence of accounting, controlling and financing departments. The status of HRM in this context is only that of an inferior executor. Although the basic issues and interests of HRM are concerned, the accounting guidelines or the guidelines to distribute financial revenues are due to decisions taken outside the personnel department. This notion of an externally controlled HRM department consequently came along with the trend of HRM outsourcing, fragmentation, and abandonment (e.g., Scholz 2004). If there are no generic strategic impulses from HRM left, the whole function is subject to negotiation.

2.8 Learning necessities

The corporate learning of HCM can be described along three widely accepted process stages which were introduced by Argyris and Schön (1974; 1978). The appropriate learning idea for the German “past” HCM is single-loop learning: it takes place in a predefined system and in a fixed frame of reference. In the case of HCM, this is the accounting and finance system of the company. In the context of theories-in-use, a person engages in single-loop learning, for example, when he learns techniques on how to ascribe costs to cost units or how to ascribe revenues to single employees. It is the mere learning of behavior according to the “what”-question.

The cyberneticist Maruyama (1965) talks in the same way of a classificational universe: it is object-oriented, and learning resembles opening drawers with contents that are hierarchically categorized and exactly specified.

3. The present

3.1 Underlying theory

In present German HCM, a fundamental theoretical shift has taken place. While former approaches focused either on the market-based or resource-based view, considering them as obviously mutually exclusive because of their basic premises, contemporary approaches integrate both views. The theoretical basis is the combination of market-based view *and* resource-based view (e.g., Bechtel 2006).

This integration changes the idea of the relevant market: It is no longer the product market but the labor market. It is rather surprising that the long-lasting concentration on the sales market in the past has obstructed the suggesting and obvious view on the market of human resources. Taking the labor market into account, a contemporary

HCM considers variables like the wage level and the scarcity of labor to be relevant. The internal human resources policy has to be matched with the aggregate market-wide human resource policies. By this, the meaningfulness of corporate human capital values exceeds the single company and becomes an indicator for competitiveness on the labor market.

3.2 Valuation logic and prevalent definition

The appropriate logic for the integration of market-based view and resource-based view is a logic which focuses the performance potential of the workforce (e.g., Scholz/Stein 2006a). According to this logic, human capital has to reflect the performance potential which is created by the existing skill and capability pool represented by the whole staff. As a standardized value, the human capital value then represents the minimum expected value creation (but not the minimum expected market sales) of the workforce.

The performance potential can only be determined through core HRM activities with a clear performance relationship independent from the present entrepreneurial success on the sales market. This performance potential of a company therefore consists at least of the existing employees, priced with market salaries, of their equipment with up-to-date knowledge as well as of their motivational situation which is mainly influenced by HRM. The measured variables are not linked to business turnover: The value of the staff does not change automatically if the enterprise gains or loses profit or if the stock price changes.

The prevalent definition of present HCM in Germany points out that human capital is not only a residual value of financial data, but a synthetic value which aggregates several characteristics of people and of HRM activities in a systematic and systemic way. HCM aims at contributing to the long-term prosperity of the company by valuating the people-bound human capital of the workforce and the process-bound human capital which is caused by HRM activities. It results in the performance potential of the workforce for the company.

3.3 Predominant approaches and recent derivatives

Based on the performance potential logic, two main approaches form the German state-of-the-art of HCM. The first approach is the HCM measurement system of the Deutsche Gesellschaft für Personalführung e.V., the leading German society for HRM and leadership. In the center of the work of an expert group, a scoring model of human capital has been developed, that combines relevant human capital indicators and maps them multidimensionally in a human capital scorecard (e.g., Deutsche Gesellschaft für Personalführung e.V. 2007). It fills the gap which the Human Capital Club e.V. left open when it 2004 released its anthology on HCM in order to sensitize for the collaboration between theory and practice, for the existing experiences from heterogeneous applications, and for potential practice (e.g., Dürndorfer/Friedrichs 2004). This broadly shared vision of a contemporary HCM has been very important for the diffusion of the HCM topic into the German business community. The DGFP approach defines the single HCM variables and exceeds a mere juxtapositioning: It points out the interrelationship of the variables and arranges them in a consistent total system.

The second approach following the performance potential logic goes one step further, introducing a monetary HCM resulting in a single value for the corporate human capital. The Saarbrücker Formel approach (e.g., Scholz/Stein/Bechtel 2004) mainly concentrates on four essential HRM-related components: value base, value depreciation, value compensation, and motivational value adjustment. All four components are expressed in monetary terms by concrete measures which have been standardized by an established network of experts from academia and practice. The trend to measure HCM as a monetary value explicitly not for single employees, but for entire work teams and workforces in a primarily HRM-orientated approach, has been recently reflected abroad (e.g., Matthewman 2006; Syrett 2006).

3.4 Expected benefits

Those HCM approaches based on the performance potential logic mainly intend to identify the human capital in a professional HRM way. During the step of human capital determination, they do not discuss the effects of a high human capital yet. They aim at avoiding that human capital is defined by the market sales during its determination. In a later step, one might correlate human capital with the corporate performance (e.g. market sales) as an independent variable and is satisfied if the correlation is positive and highly significant. Therefore, in order to exclude fundamental measurement and interpretation mistakes caused by tautologies, the conceptionalists of such measurement systems urge the appliers to make the underlying logic transparent and to determine which components should, and which should not be part of the measurement model.

Once the human capital value is measured, the benefits of the subsequent interpretation and reporting process include insight and recommendation for action which can be achieved gradually as follows:

- For single employee groups as well as for the workforce as a whole, the specific constellation out of value base, value depreciation, value compensation, and value adjustment signals strategic strengths and weaknesses. One can assess in alternative scenarios how the human capital develops, has developed and will develop. Internal benchmarks between different employee groups and comparisons over time give the results an additional signification. While past HCM has documented the impact of single HRM methods on organizational performance, present HCM highlights the measurable influence of a whole set of interconnected indicators on corporate performance and company value.
- Companies are interested in calculating the per capita relationship of human capital and input variables like personnel costs. A conceivable situation is that the personnel costs are higher than the human capital – which would urge the companies to raise the question of why the investments did not lead to an increase in performance potential.
- For the company on the whole, the human capital can be connected with output values. As they are not part of the human capital value determination, they constitute an independent variable which leads to insights on which human capital generates which output and whether optimization necessities arise, i.e. how to change current behaviors, skills and capabilities to improve productivity.

- The human capital value can also be combined with non-monetary key performance indicators which can be derived from indicator models of the motivation and leadership research. So, HCM can for example be linked to the HR-related discussion around HR risks (e.g., Kobi 2002; Bernatzeder/Schütte 2005; Wucknitz 2005), and human capital preservation.

To sum it up, when top managers ask “Which are the changes in the present value of our staff?” the human capital value can give an answer which reflects the importance of HRM to the company and moreover is forward-looking as well as prompting options. The optimization of human resources can be evaluated, internal as well as external benchmarks can be added, and a substantial and influential HR strategy can be supported. HCM becomes important for a company by regulating the whole HR function and inspiring a new thinking. An example would be knowledge management where companies could determine the amount of money necessary to invest in personnel development by measuring the knowledge depreciation. Up to now, this decision on personnel development budgets has been taken to a large extent merely intuitively.

3.5 Application-oriented limitations

The discussion of the present HCM approaches in Germany is not too far-reaching yet, with the exception of the Saarbrücker Formel. Since up to now it has been the only performance potential logic-based approach resulting in a monetary human capital value, it attracts discussion (e.g., Cisek 2006; Becker/Labucay/Rieger 2006; Kossbiel 2007). These critics can be seen in a more political context where either the protagonists of the first HCM wave adhere to their original thought patterns or business consultants seem to fear for their business models. Replications (e.g., Scholz/Stein 2006b; Scholz 2007) invalidate these arguments and rather prove the sustainability of the performance potential approach.

The apprehension that the raw data for a calculation of a company-wide human capital value would not be directly available from corporate IT systems is unsubstantiated. Contrarily, the state of current IT implementation (e.g., Scholz/Braun 2005) supports that data availability is not at all a restriction. A recent review (e.g., Nöcker, 2007) sent a reminder about the desirable empirical foundation which is, however, established in empirical studies (e.g., Scholz/Stein/Müller 2007) as well as in case studies (e.g., Müller/Wurnig 2007). Not surprisingly, the criticism that the HCM according to the Saarbrücker Formel does not relate to the revenues on the product market (e.g., Marschlich/Menninger 2007, 47) is correct: Any approach which explicitly follows the performance potential logic aims at avoiding this rather problematic calculation method. Besides, a reason for almost no further discussion taking place on the performance potential logic might due to the fact that only relatively few organizations do apply HCM instruments today (e.g., Brandl/Welpe 2006).

3.6 HCM culture

The “present” HCM approaches match the German cultural need for acceptance and approval by the employees which originates from the historically grown German co-determination and participation tradition (e.g., Niedenhoff 2005). The approaches

therefore do not measure the human capital value of single employees. Such efforts would in most cases fail because of the opposition of work councils who fight any attempts of companies to create “glassy employees” and increase competitive pressure within workforces. This does not prevent companies from perceiving their employees as investments and to use the control variables of HCM approaches to communicate openly which future individual developments are expected in order to avoid sudden layoff announcements. However, the long-term view of a workforce as an investment is also acknowledged if the company performs poorly.

Also in times of extensive dismissals in German top companies coupled with job relocations to low-wage countries, the present HCM approaches have no natural bias towards permanent layoffs. In the performance potential logic, no automatic conclusion can be made whether a company is to keep or abolish jobs, while the measurement logics from the past do imply a decision on personnel reduction. Yet, HR managers can still abolish jobs if necessary, but on basis of a logic which differs from that from the past and stops a trial-and-error-HRM. It becomes obvious in advance whether mass dismissals would cut cost by 10 million per year in the short run, but in the longer run would cost 100 million in terms of human capital including not yet amortized qualification investments, or whether an HR outsourcing destroys too much know-how and deprofessionalizes the workforce which decreases significantly the human capital value.

The present HCM approaches are more effectively balanced both in favor of companies and employees. They pursue the interests of such companies aiming at a high performance workforce and its transparent and professional leadership. However, they acknowledge that the people in the company are the drivers of success and one of the remaining possibilities of companies to differentiate in competition. Therefore, HCM serves to increase the value of the company by qualifying, motivating, and retaining the employees (e.g., Friederichs/Schütte 2005) – which is again in their interest and upgrades their image. By its explicit choice of money as a code, a broader range of HRM activities than ever before is translated to quantitative economic variables which now can be set in relation to each other and becomes relevant for number-dominated fields like accounting. This reduction of complexity contributes to the economization of the value discussion within HRM, increasing internal transparency of HRM activities for the company as well as for the employees.

3.7 Corporate status

An HCM based on the performance potential fosters soft HR factors like motivation and retention while perceiving the hard effects of these activities. Such a HCM is experienced as being able to strengthen the performance contributions of the HR function and therefore needs not only to concentrate on personnel costs and the dismissal of employees in order to improve the cost/benefit-ratio of HRM activities (e.g., Ackermann 2003).

At the latest with a transparent monetary HCM, the good old time for HR managers is over in which they could allocate HR budgets in their corporate expert niche without becoming responsible for any consequences. Applying the performance po-

tential logic, it becomes directly visible when human capital is destroyed by knowledge erosion, insufficient personnel development or inadequate motivation strategies.

On the other hand, HR managers gain higher relevance in the company as they are responsible for one of the most important corporate assets. They have a performance criterion which is depending on their own work. Strategic targets for production or distribution or budget controlling can also be deduced by HRM and not only the other way round. Consequently, the HR manager concerned will be in a position to autonomously develop a HR strategy instead of waiting for demands made by other departments. No longer will finance and accounting specialists determine the fate of the human capital alone but increasingly again the company's HR experts. The growing autonomy exceeds a finance-oriented HCM which perceives human capital as not more than a residual variable to business success. Moreover, current HCM strengthens the position of HR professionals in companies because they themselves will be responsible for the whole HCM and prevent the non-HRM departments from taking over methodological – and later content-related – control.

Altogether, today's HRM function may perceive an opportunity to gain more autonomy and time for important analysis, reporting and strategic planning. Supported by IT, but not again dominated as it recently looms (e.g., Krupke/Otto/Gontard 2006), HRM is able to value the human resources independently, and does no longer even require the intervention of management consultants.

3.8 Learning necessities

Applying again the three process stages of Argyris/Schön (1974; 1978) for corporate learning, the appropriate learning idea for "present" German HCM is the double-loop learning; it takes place in a system where the structure and frame of reference can be modified. In the case of HCM, its valuation and measurement logic can be assessed and even changed. In the context of theories-in-use, a person engages in double-loop learning when he learns to be concerned with the structure of a problem according to the "why"-question.

In the same way, Maruyama (1965) talks of a relational universe: it is event-oriented, and learning addresses linkages and effects. For HCM, it is of interest whether the specific combination of variables in valuation systems is positively linked to corporate performance. If so, the effects of the single variables in the human capital measurement system on overall performance do not cannibalize each other but fit together as a systemic and holistic valuation approach. The performance potential logic results in such approaches which are systemic to the extent that they cover all major HR tasks like HR planning, recruitment, personnel development, remuneration, retention management, motivation and leadership and that changes of one task directly influence the effectiveness of other tasks.

4. The future HCM trends

4.1 Underlying theory

The underlying theories from the field of strategic management recently realize that the dynamization of global context conditions and corporate-specific context conditions calls for a dynamization of corporate core competencies. The concepts of dy-

dynamic core competencies (e.g., Lei/Hitt/Bettis 1996), of dynamic capabilities (e.g., Teece/Pisano/Shuen 1997) and of the dynamic resource-based view (e.g., Helfat/Peteraf 2003) stress that it is not unrestrictedly recommendable for companies to commit themselves for years to pre-defined competencies while the environment would enforce faster changes. The interplay of adaptation at changing problem-solving demands of the product market and the setting of own strategic segregation concepts in competition will require a balance of stability and dynamization while the capabilities and core competencies themselves cannot be interchangeable at will because they would otherwise lose their character as sustainable core competencies.

In Germany, in order to find an alternative, the concept of competence-monitoring is suggested (Schreyögg/Kliesch 2006). It takes into account the necessity of an evolvement of organizational competence, but at the same time aims to retain the advantages of a stable, path-dependent core competence structure. It is proposed to build competencies on an operative level and at the same time monitor the effects and risks of the competencies in their dynamic environments on a higher conceptual level. This parallel process does not automatically lead to changes in competences whenever the context changes, but leads to the continuous awareness of potential change needs, with the options to adapt or to not adapt.

Interestingly, the management of human resources faces all these three challenges at once which had been raised in the preceding discussion: Human resources do concern the dynamic conditions of capabilities. Potential changes in capability configurations still have to preserve the core of the valuable human resources. And carefully considered strategic decisions on the extent of intended change activities are necessary. Consequently, HCM has to refer to this theoretical point of departure and align to this discussion.

4.2 Valuation logic and prevalent definition

The underlying theoretical discussion results in a dynamization view of HCM which completes the present combination of resource-based view and market-based view. Similarly, a dynamic HCM monitoring concept based on the performance potential logic will be the most likely further development to be expected. Therefore, a *dynamic* performance potential logic is to be developed.

Within its scope, the employees as the decisive strategic resource in competition can be seen as an organizational capability in the sense of a self-organizing, company-specific problem-solving pattern. It enables companies to generate effective problem solutions by combining and coordinating the individual competencies and the single activities to an experience-based and collectively shared superordinate constellation. This architecture and its problem-solving routines are reproducible within the company but hard to imitate from outside the company. Following the dynamization view, these human resources have to be open to reconfigurations, which means to organizational learning.

HCM will serve to permanently monitor the status of human resources. This means, the optimization activities in respect to the human capital as a competency can be changed if regarded as strategically necessary but do not have to be changed. The decision is due to the reflection by the professionalized HRM function.

Future HCM in Germany will integrate a permanent monitoring system in HRM which is based on monetary human capital values according to a performance potential logic and opens it to dynamic adaptations for strategic reasons. Future HCM could be defined as an interrelated performance potential valuation and strategic value creation planning function.

4.3 *Predominant approaches*

While it is most likely that the future HCM approaches will be further developments of the present ones, in order to meet the dynamic monitoring expectations, they have to fulfill some more requirements.

The first requirement is the application of advanced optimization criteria. The pattern “the higher the human capital value, the better” is no longer appropriate. Of more strategic interest will be the differentiated assessment of which HRM quality is better in which strategic context. The interpretation of human capital values will then be really able to take into account the dynamics of strategic management. Up to now, approaches have still been neglecting the time delay effects of HCM regulation variables in their conceptualization. For example, there are obvious time lags in the effects of dismissals on motivation and retention of the workforce which have to be anticipated early enough for effective forecasting and regulation.

The second requirement is that human capital values have to be capitalized in the balance sheet which is the only way to cross-check corporate values. A proper and transparent human capital validation has to be explained to the stakeholders concerned, not only for the purpose of shareholder information but also for the purpose of signaling a professional HRM to potential applicants (e.g., Oelsnitz/Stein/Hahmann 2007). Therefore, a monetary statement of human capital will be indispensable as part of investor relations and employer branding.

The third requirement is that HCM will become an essential part of corporate management on the top corporate level. Therefore, it has to provide strategy-relevant information and basic inputs for corporate management and corporate governance. Although it is challenging to align HRM strategy to business strategy, it will be important to find a fit between employee-centered strategies and product market-centered strategies and to mutually keep pace.

4.4 *Expected benefits*

According to the requirements mentioned above, the expected benefits would first lead to a qualitatively better planning of human resources, considering the dynamic interdependencies of HR performance triggers. This could be connected to dynamic HCM planning techniques with path-dependent scenario analysis and simulations.

Concerning the balance sheet, up to now information released to the public about the total amount of human capital which is the outcome of investments in employees can hardly be found. From outside it is almost impossible even to get a first impression on the actual state of the human capital development in German companies. Therefore, the attestation by certified public accountants would be important. First approximations can be observed, for example between PricewaterhouseCoopers and

the Saarbrücker Formel, testing empirically the significance of HCM valuation methods in the context of balancing (e.g., Marschlich/Menninger 2007).

Another benefit would be the growing insights into the interplay between the market value of an enterprise as a whole on one side and the book value, brand value, patent value, and human capital value as fraction values on the other side as a contribution to the problem of purchase price allocation (e.g., Ballwieser/Beyer/Zelger 2005). The HR due diligence could be broadened when in the context of mergers and acquisitions, the value relations between the value components could be judged. HCM supports the finding of appropriate takeover prices.

With regard to the corporate management on the top level, the expectation is that by an improved reporting about human capital stocks and risks, the qualitative long-term decisions will be improved. One example is the way how a company finds its position in the “war for talents”, signaling important branding information for the labor market and attracting more employees and customers. Another example is the corporate engagement in corporate social responsibility (CSR) programs. Here, Germany already takes first steps by integrating the basic principles of the performance potential logic in good company rankings (e.g., Kröher 2007). It is also imaginable that information on human capital and its development will become arguments during collective bargaining so that mutual interests of companies and employees exceeding the income development can be deduced. In this context, it is expected that HRM will learn from the marketing function, aiming at a more condense and convincing way of presentation so that even line managers understand the need of recommended activities. This means concentrating on measuring a few, critical HCM drivers and not collecting everything at huge cost to leave it uncared in the end. As HCM will be more than pure benchmarking or trend simulating, HRM has to communicate the way how it – on basis of HCM – aims to intentionally design a unique and productively performing workforce and substantiate that by an accurate validation.

4.5 Application-oriented limitations

As regards future HCM trends in Germany, the main application-oriented limitation is the legal question of balancing human resources. Although there are no explicit accountancy rules applying to human capital, German reporting regulations have not yet seen the option of integrating human resources as a monetary value in the balance sheet. On the contrary, according to § 248 (2) HGB it is legally prohibited to capitalize any immaterial assets which have not been acquired in return for payment. Human capital is part of such goodwill. While the European IFRS and the American US-GAAP standards partly differ from these regulations, they also do not intend the discovery of human capital for external addressees (e.g., Schäfer/Lindenmayer 2004; Schmeisser 2007).

Up to now, there are some first step recommendations for the broadening of the status report as part of the annual report, e.g. in the direction of reporting on fluctuation, personnel development or compensation systems. In spite of intensifying discussions about future options on national and international levels, until now only a voluntary reporting has been possible. Additional qualitative publications like a “Personnel

Report”, a “Personnel Value Report”, or a “Personnel and Social Report” have already been published by at least some German large companies.

4.6 HCM culture

Ideally, in German HCM future, the HCM culture will be balanced in favor of the companies, their employees and society as a whole. Employees will benefit from a still growing transparency of the corporate HRM. In a labor world where employees tend no longer to enjoy a job guarantee and also the companies do no longer have a guaranteed niche in their market or a guaranteed stock of loyal employees (e.g., Scholz 2003), the psychological contracts are increasingly characterized by the open communication of demands between employers and employees. Both parties know that the other will mainly maximize its own utility, but they also know that they only can maximize their utility in interdependence. They both mutually accept their self-optimization attempts on condition that, on the one hand, employees will do a good job as long as they work in the enterprise and that the employees feel satisfactorily compensated on the other hand. In such a situation, transparency will provide additional protection against unexpected movements by the other side. Moreover, it allows the employees to use individual options like personnel development not only in their own favor but also in favor of the corporate human capital strategy.

The prevailing HCM culture becomes more straightforward and oriented towards high performance sustainability. Growing transparency on how value is created through effective HCM policies and practices will benefit executives, employees, investors, and clients who all have an interest in knowing that an organization is aspiring to high performance.

Even the acceptance of corporate HCM by the employees rises when they perceive HCM no longer as cost reduction function but as a provable investment function which is interested in fair returns. Any of such self-commitment signals of the company to the society concerning this type of internal-oriented CSR is a further step in the direction of a good-practice HRM.

4.7 Corporate status

The sketched outline of the future perspectives of HCM in Germany shows the way for the HRM department to become a really impacting function. Through HCM, it will have to professionalize. While in the past, many HR people increasingly managed to develop strong technical expertise in some fields of their work, they often had no imagination about the future and how their company was going to develop. This is most likely to change. HCM will foster HRM so that the executives think HRM matters and later integrate HRM much stronger in their own thinking. On this way, the HRM function itself is called to strengthen its competencies on analysis, reporting, and strategic planning. It will have to deliver accurate measurement and trend analysis on which the organization can act.

Even if the HRM rhetoric usually is, or at least seems, softer than the finance rhetoric, the HRM reality is as hard as the finance reality, and both meet in the overall corporate decision system. By HCM, the HRM function gains an overall survey on its most important regulation components in different strategic fields like employee

structure, knowledge management, motivation management, and compensation management which then can be assessed in terms of dynamic strategy formulation. HR managers can find an instrument which they can argumentatively use in order to assert their position and resist the pressure from all sides – for example from the top executives, the finance and accounting and IT departments, from the marketing and from the employees.

4.8 Learning necessities

Based on the three process stages of Argyris/Schön (1974; 1978) for corporate learning, the appropriate learning idea for “future” German HCM has to be deuterolearning: here, the organization even deals with their own ways to learn. A meta-learning emerges, reflecting all parts of the HCM system in connection with the HCM valuation situation of the company. In the context of theories-in-use, a person engages in deuterolearning when he learns to be concerned with the underlying logics and application rules of a problem according to the “what for”-question.

Maruyama (1965) talks in the same way of a relevant universe: it is interpretation-oriented, and learning addresses strategies and sensemaking. This “learning to learn” serves to create redundancies and variety for the system which are needed to increase self-organization capabilities of an organization. The employees learn patterns of change and how to adapt to them; therefore, HCM is no longer a static but a dynamic system. Moreover, the employees – at least from HRM – are motivated to autonomously enlarge their intellectual skills concerning HCM so that they can develop the approaches themselves. This is realistic if the employees understand the overall situation in which HCM takes place. But only then they will be able to align the HCM system to the demands of a sustainable corporate social responsibility or to the demands of the war for talents.

5. Synopsis

Bringing together the German discussion on HCM, a mental picture emerges which shows the development from German HCM past to the future perspectives (table 1).

6. Conclusion

The German HCM approaches have differentiated in previous years and will doubtlessly in the future, too. Still, not all the measurement systems proposed are really able to measure what they promise (e.g., Stein 2006): Some approaches are rather re-labeled HRM systems, more or less intuition-based technologies, approaches open to manipulation, or mainly a collection of isolated – and partly assumed – key performance indicators. But the advancement of HCM approaches continues.

The development follows a typical evolutionary path, showing an ongoing sequence of variation, selection, and retention. At all evolutionary stages, monetary and non-monetary HCM approaches can be found. In Germany, however, an obvious shift towards a monetary HCM is currently taking place. Although past approaches are likely to be preserved in the future because of evolutionary inertia, the learning progress from single-loop learning to deuterolearning also induces evolutionary progress. As the present paper has shown, the evolution of HCM in Germany is obviously facilitated by mechanisms that increase acceptance on part of the workforce as well as

Table 1: Synoptical grid on HCM in Germany

	Past	Present	Future
(1) Underlying theories	(a) resource-based view <i>or</i> (b) market-based view	resource-based view <i>and</i> market-based view	resource-based view <i>and</i> market-based view <i>and</i> dynamization view
(2) Valuation logic and prevalent definition	(a) cost accounting logic: HCM as input-related activity of measuring and influencing the costs of gaining and retaining a workforce as well as the costs of further investments which are relevant for human capital like job design improvement and work condition optimization (b) surplus distribution logic: HCM as output-related activity to measure profits on the product market and distribute them to single employees or work teams according to their contribution to overall success	performance potential logic: HCM aggregates several characteristics of people and of HRM activities in a systematic and systemic way, resulting in the performance potential of the workforce for the company which is more than a residual value of financial data. It aims to contribute to the long-term prosperity of the company by valuating the people-bound human capital of the workforce and the process-bound human capital caused by HRM activities	dynamic performance potential logic: HCM, defined as an interrelated performance potential valuation and strategic value creation planning function, will integrate a permanent monitoring system which is based on monetary human capital values according to a performance potential logic and opens it to dynamic adaptations for strategic purposes
(3) Predominant approaches and recent derivatives	(a) e.g., Humanvermögensrechnung (Human Resource Accounting), knowledge balance sheets, indicator-based systems (b) e.g., Workonomics, Knowledge Capital, Berliner Balanced Scorecard	Human Capital Club DGFP Saarbrücker Formel	further developments of approaches based on the performance potential logic
(4) Expected benefits	(a) exact HR cost planning (b) strengthening the strategic HRM contribution; attractive business model for finance-oriented management consultants	a meaningful human capital value according to professional HRM strategic inner-HRM human capital regulation	dynamic optimization criteria for HCM transparency via balance sheet top level management significance of HCM results
(5) Application-oriented limitations	(a) costs do not allow for sound human capital value statements (b) dependence on sales markets; arbitrariness of results; danger of manipulation; tautological interpretation	slow empirical foundation	up to now legal prohibition to capitalize human capital in the balance sheet
(6) HCM culture	unbalanced, in favor of the company	balanced, in favor of the company and the employees	balanced, in favor of the companies and the employees and society
(7) Corporate status	accounting, controlling and financing departments dominate HCM	renaissance of HRM as emancipated internal management function	HRM function, professionalized through HCM, really impacting corporate strategy
(8) Learning necessities	single-loop learning of behavior, answering the "what"-question, in a fixed frame of reference	double-loop learning of structures, answering the "why"-question, in a modifiable frame of reference	deutero-learning of strategies and sensemaking, answering the "what for"-question, in an unsteady field of application rules

of society. The normative pressure to achieve corporate social responsibility also within HCM goes along with a redefinition of the HR function towards professionalism and cautious dynamization. It can be seen that depending on the general culture-

bound conditions prevailing in the country, German politics rather refrain from this discussion, leaving it to the companies and their respective economic environment instead.

The synoptic view of German HCM development and its evaluation criteria applied in the present contribution allow distinguishing between an advanced and backward oriented HCM system. In case the serious occupation with HCM continues, the transparent human capital valuation could contribute to achieving competitive advantages for companies as well as for the whole country. Companies are challenged to employ highly qualified personnel at acceptable cost structures, to retain people's knowledge and to motivate them to perform. In this sense, HCM is able to influence the adaptation processes which are necessary to safeguard Germany's economic stability and progress in the future, too.

References

- Ackermann, Karl-Friedrich (2003): Den Wert des Humankapitals bestimmen. In: *Personalwirtschaft*, 30 (9), 46-49.
- Arbeitskreis "Immaterielle Werte im Rechnungswesen" der Schmalenbach-Gesellschaft für Betriebswirtschaft e.V. (2001): Kategorisierung und bilanzielle Erfassung immaterieller Werte. In: *Der Betrieb*, 56 (23), 1233-1237.
- Argyris, Chris / Schön, Donald A. (1974): *Theory in Practice*. San Francisco, CA: Jossey-Bass.
- Argyris, Chris / Schön, Donald A. (1978): *Organizational Learning*. Reading, MA: Addison-Wesley.
- Ballwieser, Wolfgang / Beyer, Sven / Zelger, Hansjörg (Eds.) (2005): *Unternehmenskauf nach IFRS und US-GAAP. Purchase Price Allocation, Goodwill und Impairment-Test*. Stuttgart: Schäffer-Poeschel.
- Barney, Jay B. (1991): Firm Resources and Sustained Competitive Advantage. In: *Journal of Management*, 17 (1), 99-120.
- Barrette, Jacques / Ouellette, Rachel (2000): Performance Management: Impact of the Integration of Strategy and Coherence of HRM Systems on Organizational Performance. In: *Industrial Relations*, 55 (2), 207-226.
- Bartscher, Thomas R. / Steinmann, Olaf (1990): Der Human-Resource-Accounting-Ansatz innerhalb der Personal-Controlling-Diskussion. In: *Zeitschrift für Personalforschung*, 4 (4), 387-401.
- Bechtel, Roman (2006): *Humankapitalberechnung zwischen Markt- und Ressourcenorientierung. Eine axiomatische Integration*. Munich – Mering: Hampp.
- Becker, Brian E. / Huselid, Mark A. (1998): High Performance Work Systems and Firm Performance: A Synthesis of Research and Managerial Implications. In: Ferris, Gerald R. (Ed.): *Research in Personnel and Human Resource Management*, 16 (1), 53-101.
- Becker, Brian E. / Huselid, Mark A. / Ulrich, Dave (2001): *The HR Scorecard. Linking People, Strategy and Performance*. Cambridge, MA: Harvard Business School Press.
- Becker, Gary S. (1962): Investment in Human Capital. A Theoretical Analysis. In: *Journal of Political Economy*, 70 (Supplement October), 9-49.
- Becker, Gary S. (1964): *Human Capital. A Theoretical and Empirical Analysis, with Special Reference to Education*. New York: Columbia University Press.
- Becker, Manfred / Labucay, Inéz / Rieger, Caroline (2006): Formel ohne Fortschritt. In: *Personal*, 58 (11), 30-32.
- Bender, Chrisitan / Röhling, Thomas (2001): Ansätze zur Bewertung und Risikomessung von Humankapital. In: Kossbiel, Hugo (Ed.): *Modellgestützte Personalentscheidungen 5*. Munich – Mering: Hampp, 27-39.
- Bernatzeder, Petra / Schütte, Martin (2005): Risikomanagement des Humankapitals – Herausforderung und Chance. In: *CM controller magazin*, 30 (2), 164-167.
- Berthel, Jürgen / Becker, Fred G. (2003): *Personal-Management*. 7. ed. Stuttgart: Schäffer-Poeschel.

- Bontis, Nick / Dragonetti, Nicola C. / Jacobsen, Kristine / Roos, Göran (1999): The Knowledge Toolbox: A Review of the Tools Available to Measure and Manage Intangible Resources. In: *European Management Journal*, 17 (4), 391-402.
- Boxall, Peter / Purcell, John / Wright, Pat (Eds.) (2007): *The Oxford Handbook of Human Resource Management*. Oxford etc.: Oxford University Press.
- Brandl, Julia / Welpel, Isabell (2006): Ursachen der Ablehnung von Human Capital Management seitens der Unternehmensführung. In: *Die Betriebswirtschaft*, 66 (5), 540-558.
- Chartered Institute of Personnel and Development (Ed.) (2006): *What's the Future for Human Capital?* London: CIPD.
- Cisek, Günter (2006): Personalwirtschaftliche Programmpolitik. In: *Personal*, 58 (6), 30-32.
- Conrad, Peter / Pieper, Rüdiger (1990): Human Resource Management in the Federal Republic of Germany. In: Pieper, Rüdiger (Ed.): *Human Resource Management: An International Comparison*. Berlin – New York: de Gruyter, 109-139.
- Correa, Héctor (1962): *The Economics of Human Resources*. Amsterdam: North-Holland.
- Delaney, John T. / Huselid, Mark A. (1996): The Impact of Human Resource Management Practices on Perceptions of Performance in For-profit and Nonprofit Organizations. In: *Academy of Management Journal*, 39 (4), 949-969.
- Deutsche Gesellschaft für Personalführung e.V. (Ed.) (2007): *Human Capital messen – Annäherungen an ein herausforderndes Thema* (in print).
- Dierkes, Meinolf / Bauer, Raynold A. (Eds.) (1973): *Corporate Social Accounting*. New York – Washington – London: Praeger.
- Drumm, Hans Jürgen (2005): *Personalwirtschaft*. 5. ed. Berlin – Heidelberg: Springer.
- Dürndorfer, Martina / Friedrichs, Peter (Eds.) (2004): *Human Capital Leadership. Wettbewerbsvorteile für den Erfolg von morgen*. Hamburg: Murmann.
- Edvinsson, Leif / Malone, Michael S. (1997): *Intellectual Capital. Realizing Your Company's True Value by Finding Its Hidden Roots*. New York: Harper Business.
- Engelen-Kefer, Ursula (1982): Humankapitalrechnung und Arbeitnehmerinteressen – Ein Beitrag aus der Sicht der deutschen Gewerkschaften. In: Schmidt, Herbert (Ed.): *Humanvermögensrechnung. Instrumentarium zur Ergänzung der unternehmerischen Rechnungslegung – Konzepte und Erfahrungen*. Berlin – New York: de Gruyter, 283-297.
- Esselborn, Richard F. / Henke, Mareile (2001): *Humankapital. Das aries Verfahren zur Berechnung von Human- und Unternehmungskapital*. 2. ed. Freiburg – Leipzig: Books on Demand.
- Fischer-Winkelmann, Wolf F. / Hohl, Eberhard K. (1982): Konzepte und Probleme der Humanvermögensrechnung. In: *Der Betrieb*, 35 (51/52), 2636-2644.
- Fitz-enz, Jac (2000): *The ROI of Human Capital. Measuring the Economic Value of Employee Performance*. New York etc.: Amacom.
- Flamholtz, Eric (1973): The Role of Human Resource Accounting in Social Accounting. Dierkes, Meinolf / Bauer, Raynold A. (Eds.): *Corporate Social Accounting*. New York – Washington – London: Praeger.
- Fombrun, Charles J. / Tichy, Noel M. / DeVanna, Mary Anne (1984): *Strategic Human Resource Management*. New York: Wiley.
- Friedrichs, Peter (1998): Konsequentes Führungscontrolling durch den Employee-Value-Index. In: *Personalführung*, 31 (4), 70-75.
- Friedrichs, Peter / Schütte, M. (2005): Offener Brief des Human-Capital-Club e.V. vom 20.01.2005 zum Thema: "Unwort des Jahres". <http://www.coaching-informationen.de/270,745.html> (called 2007-01-31).
- Gloth, Hans-Jürgen (2003): If You Can't Measure It, You Cannot Manage It. *Humatics: Wissen messen*. In: *Co-Pers*, 11 (1), 80-85.
- Gutenberg, Erich (1951): *Grundlagen der Betriebswirtschaftslehre*. 1. Band: Die Produktion. Berlin – Göttingen – Heidelberg: Springer.
- Hampden-Turner, Charles / Trompenaars, Alfons (1993): *The Seven Cultures of Capitalism*. New York: Bantam Dell.
- Helfat, Constance E. / Peteraf, Margaret A. (2003): The Dynamic Resource-Based View: Capability Life-cycles. In: *Strategic Management Journal*, 24 (10), 997-1010.

- Hendry, Chris / Pettigrew, Andrew M. (1992): Patterns of Strategic Change in the Development of Human Resource Management. In: *British Journal of Management*, 3 (3), 137-156.
- Hitt, Michael A. / Biermant, Leonard / Shimizu, Katsuhiko / Kochhar, Rahul (2001): Direct and Moderating Effects of Human Capital on Strategy and Performance in Professional Service Firms: A Resource-Based Perspective. In: *Academy of Management Journal*, 44 (1), 13-28.
- Hofstede, Geert (1980): *Culture's Consequences. International Differences in Work-Related Values*. Beverly Hills – London: Sage.
- Human Capital Institute (Ed.). (2006): *Global Talent. An Anthology of Human Capital Strategies for Today's Borderless Enterprise*. Washington, DC: Human Capital Institute.
- Huselid, Mark A. (1995): The Impact of Human Resource Management Practices on Turnover, Productivity, and Corporate Financial Performance. In: *Academy of Management Journal*, 38 (3), 635-672.
- Kiehn, Adrian (1996): *Möglichkeiten und Grenzen der ökonomischen Analyse der Wertschöpfung des Personalmanagements*. Bamberg: Difo-Druck.
- Kobi, Jean-Marcel (2002): *Personalrisikomanagement. Strategien zur Steigerung des People Value*. 2. ed. Wiesbaden: Gabler.
- Kötter, Paul (2006): *Human Capital Management: Der Kienbaum Ansatz*. Discussion Paper. http://www.kienbaum.de/cms/gfx/content/pdf/human_capital_management_der_kienbaum_ansatz.pdf (called 2007-01-31).
- Kossbiel, Hugo (2007): Anmerkungen zur Logik, Mystik und Heroik in der so genannten Saarbrücker Formel für die Bewertung des Humankapitals. In: *Zeitschrift für Management*, 2 (3), 336-348.
- Kröher, Michael O. R. (2007): Gute Nachbarn. Good Company Ranking. In: *manager magazin*, 37 (2), 76-84.
- Kruppke, Helmut / Otto, Manfred / Gontard, Maximilian (Eds.) (2006): *Human Capital Management. Personalprozesse erfolgreich managen*. Berlin – Heidelberg: Springer.
- Lawler, Edward E. III. (1973): Quality of Working Life and Social Accounts. In: Dierkes, Meinulf / Bauer, Raynold A. (Eds.): *Corporate Social Accounting*. New York – Washington – London: Praeger, 154-165.
- Legge, Karen (1995): *Human Resource Management. Rhetorics and Realities*. Basingstoke: Macmillan.
- Lei, David / Hitt, Michael A. / Bettis, Richard (1996): Dynamic Core Competencies Through Meta-Learning and Strategic Context. In: *Journal of Management*, 22 (4), 549-569.
- Lingemann, Hans-Friedrich (2001): Wissensbilanz. Instrument für die Personalarbeit. In: *FB/IE – Zeitschrift für Unternehmensentwicklung und Industrial Engineering*, 50 (4), 175-177.
- Marr, Rainer (1982): Humanvermögensrechnung – Entwicklung von Konzepten für eine erweiterte Rechenschaftslegung der Unternehmen. In: Schmidt, Herbert (Ed.): *Humanvermögensrechnung. Instrumentarium zur Ergänzung der unternehmerischen Rechnungslegung – Konzepte und Erfahrungen*. Berlin – New York: de Gruyter, 45-55.
- Marschlich, Annette / Menninger, Jutta (2007): Ist das die Formel für Humankapital? In: *pwc: Das Magazin für Voraussenker*, (January), 42-47.
- Matthewman, Jim (2006): Focus on Measurement. In: *Chartered Institute of Personnel and Development (Ed.): What's the Future for Human Capital?* London: CIPD, 43-53.
- Maul, Karl-Heinz (2000): Wissensbilanzen als Teil des handelsrechtlichen Jahresabschlusses. Wissensbilanzen dargestellt am Beispiel des Jahresabschlusses von Hochschulen. In: *Deutsches Steuerrecht*, 38 (47), 2009-2016.
- Mohr, Hans-Christian / Keilholz, Ulrich (2001): *Human Capital in der Post Merger Integration. Eine Studie von William M. Mercer*. Frankfurt/Main: Mercer.
- Morgan, Gareth (1986): *Images of Organization*. Beverly Hills/Cal. etc.: Sage.
- Müller, Stefanie / Wurnig, Martin (2001): Human Capital Management mit der Saarbrücker Formel – im Einsatz bei der Telekom Austria. In: *Personal manager*, 5 (4), 29-31.
- Murayama, Magoroh (1965): Metaorganization of Information: Information in a Classificational Universe, Relational Universe, and Relevational Universe. In: *Cybernetica*, 8 (4), 224-236.
- Niederhoff, Horst-Udo (2005): *Mitbestimmung in der Bundesrepublik Deutschland*. 14. ed. Cologne: Deutscher Instituts-Verlag.
- Nöcker, Ralf (2007): Was sind Ihre Leute wert? In: *Frankfurter Allgemeine Zeitung*, 03.02.2007, C1.
- Oelsnitz, Dietrich von der / Stein, Volker / Hahmann, Martin (2007): *Der Talente-Krieg. Personalstrategie und Bildung im globalen Kampf um Hochqualifizierte*. Bern – Stuttgart: Haupt.

- Ortner, Gerhard E. (1982): Personalvermögensrechnung: zur Übertragung des Humankapital-Konzeptes auf die betriebliche Personalinfrastruktur. In: Schmidt, Herbert (Ed.): *Humanvermögensrechnung. Instrumentarium zur Ergänzung der unternehmerischen Rechnungslegung – Konzepte und Erfahrungen*. Berlin – New York: de Gruyter, 357-395.
- Pfeffer, Jeffrey (1994): *Competitive Advantage Through People. Unleashing the Power of the Work Force*. Boston: Harvard Business School Press.
- Pfeffer, Jeffrey (1995): Producing Sustainable Competitive Advantage through the Effective Management of People. In: *Academy of Management Executive*, 9 (1), 55-69.
- Porter, Michael E. (1980): *Competitive Strategy. Techniques for Analyzing Industries and Competitors*. New York: Free Press.
- Rumpf, Hartmut (1978): Betriebliche Humanvermögensrechnungen. In: *Zeitschrift für betriebswirtschaftliche Forschung*, 30 (6), 453-463.
- S.E.J. (1994): From the Editor... In: *Academy of Management Review*, 19 (1), 7-9.
- Schäfer, Henry / Lindenmayer, Philipp (2004): *Externe Rechnungslegung und Bewertung von Humankapital – Stand der betriebswirtschaftlichen Diskussion*. Stuttgart: Universität Stuttgart/Hans Böckler Stiftung.
- Schmeisser, Wilhelm (2007): Zur Ansatz- und Bewertungsproblematik von Humankapital nach IFRS. In: *Betriebswirtschaftliche Forschung und Praxis*, 59 (1), 1-19.
- Schmeisser, Wilhelm / Schindler, Falko / Clausen, Lydia / Lukowski, Martina / Görlitz, Bennet (2006): *Einführung in den Berliner Balanced Scorecard Ansatz. Ein Weg zur wertorientierten Performancemessung für Unternehmen*. Munich – Mering: Hampp.
- Schmidt, Herbert (1975): Begriff, Inhalt und Umfang der Personalplanung. In: Schmidt, Herbert / Hagenbrück, Hasso / Sämman, Werner (Eds.): *Handbuch der Personalplanung*, Frankfurt – New York: Herder & Herder, 13-31.
- Schmidt, Herbert (1982): Humanvermögensrechnung der Unternehmen – Einzel- und gesamtwirtschaftliche Argumente zur Ergänzung der betrieblichen Rechnungslegung. In: Schmidt, Herbert (Ed.): *Humanvermögensrechnung. Instrumentarium zur Ergänzung der unternehmerischen Rechnungslegung – Konzepte und Erfahrungen*. Berlin – New York: de Gruyter, 3-44.
- Schoenfeld, Hanns-Martin W. (1974): Die Rechnungslegung über das betriebliche "Human-Vermögen". Eine kritische Betrachtung des Entwicklungsstandes. In: *Betriebswirtschaftliche Forschung und Praxis*, 26 (1), 1-33.
- Schoenfeld, Hanns-Martin W. (1993): Humanvermögen. In: Chmielewicz, Klaus / Schweitzer, Marcell (Eds.): *Handwörterbuch des Rechnungswesens*. 2. ed. Stuttgart: Schäffer-Poeschel, 889-896.
- Scholz, Christian (1982): Zur Konzeption einer strategischen Personalplanung. In: *Zeitschrift für betriebswirtschaftliche Forschung*, 34 (11), 979-994
- Scholz, Christian (2000a): *Personalmanagement. Informationsorientierte und verhaltenstheoretische Grundlagen*. 5. ed. Munich: Vahlen.
- Scholz, Christian (2000b): *Strategische Organisation. Multiperspektivität und Virtualität*. 2. ed. Landsberg/Lech: moderne industrie.
- Scholz, Christian (2003): *Spieler ohne Stamplatzgarantie. Darwipportunismus in der neuen Arbeitswelt*. Weinheim: Wiley-VCH.
- Scholz, Christian (2004): Outsourcing: Strategisches Konzept oder operative Selbstauflösung? In: *Personal*, 56 (1), 14-17.
- Scholz, Christian (2007): Es zieht ein Herr Becker durchs Land ... noch immer – Replik zur Kritik am Artikel zur Saarbrücker Formel. In: *Betriebswirtschaftliche Forschung und Praxis*, 59 (1), 59-65.
- Scholz, Christian / Braun, Martin (2005): Standardisierung statt Emotionalisierung. In: *CoPers*, 13 (1), 10-12.
- Scholz, Christian / Stein, Volker (2006a): Das neue Paradigma der Humankapitalbewertung. In: *Personal*, 58 (7-8), 52-53.
- Scholz, Christian / Stein, Volker (2006b): Praxisferne Sicht. In: *Personal*, 58 (12), 37-39.
- Scholz, Christian / Stein, Volker / Bechtel, Roman (2004): *Human Capital Management. Wege aus der Unverbindlichkeit*. Munich/Unterschleißheim: Luchterhand.
- Scholz, Christian / Stein, Volker / Müller, Stefanie (2007): *Monetary Human Capital Measurement: Empirical Evidence from the German DAX 30 Companies*. Paper Presentation on the 2007 Annual Meeting of the Academy of Management, Philadelphia, PA, 06.08.2007.

- Schreyögg, Georg / Kliesch, Martina (2006): Zur Dynamisierung Organisationaler Kompetenzen – “Dynamic Capabilities” als Lösungsansatz? In: Zeitschrift für betriebswirtschaftliche Forschung, 58 (6), 455-476.
- Schuler, Randall S. / Jackson, Susan E. (Eds.) (1999): Strategic International Human Resource Management: A Reader. London: Blackwell.
- Schultz, Theodore W. (1961): Investment in Human Capital. In: American Economic Review, 51 (5), 1-17.
- Schultz, Theodore W. (1971): Investment in Human Capital. The Role of Education and of Research. New York: Free Press.
- Siegert, Theo (1999): Humankapital: Erfolgsmessung und Partizipation. In: Bühler, Wolfgang / Siegert, Theo (Eds.): Unternehmenssteuerung und Anreizsysteme. Kongress-Dokumentation 52. Deutscher Betriebswirtschaftler-Tag 1998. Stuttgart: Schäffer-Poeschel, 17-46.
- Simon, Hermann (2000): Was ist ein Mitarbeiter wert? In: management berater, 4 (7), 52-53.
- Sparrow, Paul / Hiltrop, Jean-M. (1994): European Human Resource Management in Transition. London: Prentice-Hall.
- Stein, Volker (2006): Humankapitalbewertung: fundiert oder “frisiert”? In: CoPers, 14 (7), 44-45.
- Stewart, Thomas A. (1997): Intellectual Capital. The New Wealth of Organizations. London: Nicholas Brealey.
- Strack, Rainer (2002): Workonomics: Wertorientierte Steuerung des Humankapitals. In: Klinkhammer, Heinz (Ed.): Personalstrategie. Personalmanagement als Business Partner. Neuwied – Kriftel: Luchterhand, 71-90.
- Strack, Rainer / Franke, Jutta / Dertnig, Stephan (2000): Workonomics: Der Faktor Mensch im Wertmanagement. In: Zeitschrift Führung + Organisation, 69 (5), 283-288.
- Strassmann, Paul A. (1999): Does Knowledge Capital Explain Market/Book Valuations? <http://files.strassmann.com/pubs/km/1999-9.php> (called 2003-07-24).
- Sveiby, Karl Erik (1997): The New Organizational Wealth: Managing and Measuring Knowledge-Based Assets. San Francisco, CA: Berrett-Koehler.
- Syrett, Michel (2006): Four Reflections on Developing a Human Capital Measurement Capability. In: Chartered Institute of Personnel and Development (Ed.): What's the Future for Human Capital? London: CIPD, 54-68.
- Teece, David J. / Pisano, Gary / Shuen, Amy (1997): Dynamic Capabilities and Strategic Management. In: Strategic Management Journal, 18 (7), 509-533.
- Ulrich, Dave (1997): Human Resource Champions: The Next Agenda for Adding Value and Delivering Results. Boston: Harvard Business School Press.
- Vetter, Heinz Oskar (Ed.) (1974): Humanisierung der Arbeit als gesellschaftspolitische und gewerkschaftliche Aufgabe. Frankfurt/Main – Cologne: Europäische Verlagsanstalt.
- Weiermair, Klaus (1976): Über die Bewertung des betrieblichen Personalkapitals. In: Betriebswirtschaftliche Forschung und Praxis, 28 (3), 255-269.
- Wernerfelt, Birger (1984): The Resource-Based View of the Firm. In: Strategic Management Journal, 5 (2), 171-180.
- Wimalasiri, Jayantha S. (1995): An Examination of the Influence of Human Resource Practices, Organizational Commitment, and Job Satisfaction on Work Performance. In: International Journal of Management, 12 (3), 352-363.
- Wucknitz, Uwe D. (2002): Handbuch Personalbewertung. Messgrößen – Anwendungsfelder – Fallstudien. Stuttgart: Schäffer-Poeschel.
- Wucknitz, Uwe D. (2005): Personal-Rating und Personal-Risikomanagement. Wie mittelständische Unternehmen ihre Bewertung verbessern. Stuttgart: Schäffer-Poeschel.
- Wunderer, Rolf (1992): Von der Personaladministration zum Wertschöpfungs-Center. In: Die Betriebswirtschaft, 52 (2), 201-215.
- Zapke-Schauer, Gerhard (2005): Vernichtet der Begriff “Humankapital” Arbeitsplätze? <http://www.perspektive-blau.de/artikel/0504a/0504a.htm> (called 2007-13-01).
- Zinn, Karl Georg (1992): Soziale Marktwirtschaft. Idee, Entwicklung und Politik der bundesdeutschen Wirtschaftsordnung. Mannheim: B.I.-Taschenbuchverlag.
- Zucker, Betty (2005): Menschenmaterial und Humankapital. Akquisition Mensch. Alpha – Der Kadermarkt der Schweiz, 02./03.04.2005, 1+3.