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Abstract

The most influential theory of corporate governance, principal agency theory, does not take into consideration that the key task of modern corporations is to generate and transfer firm-specific knowledge. It proposes that, in order to overcome the widespread corporate scandals, the interests of top management and directors should be increasingly aligned to shareholder interests by making the board more responsible to shareholders, and strengthening the monitoring of top management by independent outside directors. Corporate governance reform needs to go in another direction altogether. Firm-specific knowledge investments are, like financial investments, not ex ante contractible, leaving investors open to exploitation by shareholders. Employees therefore refuse to make firm-specific investments. To gain a sustainable competitive advantage, there must be an incentive to undertake such firm-specific investments. Three proposals are advanced to deal with this conflict: (1) The board should rely more on *insiders*. (2) The insiders should be elected by those employees of the firm *making firm-specific knowledge investments*. (3) The board should be chaired by a *neutral person.* These proposals have major advantages: they provide incentives for knowledge investors; they countervail the dominance of executives; they encourage intrinsic work motivation and loyalty to the firm by strengthening distributive and procedural justice, and they ensure diversity on the board while lowering transaction costs. These proposals for reforming the board may help to overcome the crisis corporate governance is in. At the same time, they connect agency theory with the knowledge-based theory of the firm.

(243 words)

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JEL-Classification: J 24, J 33, J 41, J 53, M 12, M 52

INTRODUCTION

Recent corporate scandals have turned the spotlight on the board of directors. Numerous suggestions have been made as to how the efficiency of the boards could be improved, but only a few of these suggestions have taken into account what is today common understanding in the strategic management literature, namely that the key task of firm governance is to generate, accumulate, transfer and protect valuable knowledge and capability (e.g. Penrose 1959; Rumelt 1984; Teece et al. 1977; Kogut & Zander 1996; Spender 1996). In particular, agency theory, as the main approach in the corporate governance discussion, has disregarded knowledge work aspects. But, nevertheless, agency theory ideas have had a marked influence on the discussion, both in theory and practice (Daily, Dalton &Canella 2003). Agency theory contends that the key activity for boards is to monitor management on behalf of the shareholders, and to ignore that governing the management of knowledge work might be different from governing the management of physical work.

The main idea of the principal agent point of view is that there is a conflict of interest between managers (agents) and shareholders (principals), due to the separation of ownership and control in public corporations (Berle & Means 1932). In order to align these interests, the control of management was transferred to the board of directors as a second level of agency (e.g. Black 1992). During the 1990s, the main opinion on how to achieve better alignment of these interests was to tie the pay of managers and directors to their performance (e.g. Jensen & Murphy 1990; Jensen 1993). In order to curb opportunistic behavior, agency theory argues that both the CEOs' and directors' incentives need to be aligned with the shareholders by providing managers and directors with equity based stakes in their firms. By tying pay to equity related pay, managers are

believed to work harder, and boards are believed to be more active in monitoring managers. Corporate policy has widely followed this point of view. Examples can be seen in the United States' tax code requirement 162(m) that top executive pay in excess of one million US dollars is only tax-deductible if it is related to performance. USA shareholder groups, e.g. influential pension funds like the California Public Employees' Retirement System (CALPERS), supported the idea that at least 50 percent of the directors' total compensation should be in company stock (Chung-Keung & Robin 2004).

In the meantime, the adverse effects of these equity-based compensation programs have become quite clear. Some managers exploit the shareholders, as well as the employees, in a self-serving capacity. Top five executive compensation increased from six percent of aggregate corporate earnings in 1993-1997 to 10 percent in 1998-2002 (Bebchuk 2004). In comparison to the compensation of industrial workers, executive compensation virtually exploded. In 1991, an American CEO earned, on average, 25 times as much as the average worker. In 2003, the average CEO earned about 500 times as much (The Economist, December 11: 59).

Some managers even fiddled the accounts. From 1992 to 2001, it became evident that a higher amount of variable pay for performance in total CEO compensation is linked to fraud. The Securities and Exchange Commission (SEC) has officially identified 43 "fraud firms" during that period. These "fraud firms" have been compared with 2500 S&P "innocent firms". The median change in an executive's stock and option portfolio for a 1000 dollar change in firm value (dollars-on-dollars incentive) in "fraud firms" is more than twice as high as that of "innocent firms" (Johnson, Ryan & Tian 2003). A report issued by the General Accounting Office (GAO 2002) stated that, between 1997 and 2002, formal accounting restatements of publicly held

companies were most likely to occur in firms with a high proportion of stock options in terms of CEO pay (Harris & Bromiley 2004).

The explosion of management compensation and the wave of corporate scandals, which began in late 2001, drew attention to flaws in the underlying governance structure. Even proponents of the principal agent view which, some years ago, was very much in favor of solving the problem of separation of ownership and control based on equity-based salaries, now admit that the explosion of executives' and directors' pay has proven to be "managerial and organizational heroin" (Jensen, Murphy & Wruck 2004, p.45) or "pay without performance" (Bebchuk & Fried 2004). It has also been shown that the equity based compensation for directors does not increase their control over the firm. A recent meta-analysis was unable to find a positive relationship between board equity compensation and firm performance (Dalton et al. 2003), as proponents of the principal agent view have hypothesized (Jensen 1993). However, they still fully support the equity-based compensation of CEOs and directors,[1] but suggest that board structures and board characteristics should be altered. In particular, it is argued that two conditions must be met in order to make corporate governance work (Jensen, Murphy & Wruck 2004; Bebchuk & Fried 2004):

Firstly, the board should become more independent of their CEOs in order to be able to monitor them more efficiently. The board should operate at arms' length from the executives. As a result, the board would be less inclined to agree with the rent-seeking behavior of CEOs. Boards too closely linked to executives hinder market forces, like the markets for capital, corporate control and managerial labor, from imposing stringent constraints on managers. Rather, they frequently see themselves effectively as the subordinates of the CEO. It is proposed that there should be a

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[1] For a critique see Frey & Osterloh 2005

preponderance of outside directors on the board. The board should never be chaired by a person who was previously the CEO, though this is indeed very often what happens. The CEO should be the only member of the management team with board membership (Jensen, Murphy & Wruck 2004: 55).

Secondly, the board should become more dependent on their shareholders. Boards should be made more attentive to the shareholders' interests. For instance, shareholders should stand for annual election by the shareholders (Bebchuk & Fried 2004). Directors should act solely in the interests of the shareholders, because it's not possible to maximize more than one objective (Jensen 2001). This advice derives from the view of the firm as a nexus of contracts. The firm is "a legal fiction which serves as a focus for the complex process in which the conflicting objectives of individuals … are brought in equilibrium within a framework of contractual relationship" (Jensen and Meckling 1976: 312). With this view, all possible conflicts between shareholders and other stakeholders (including the employees) could be solved ex ante by contracts. Because shareholders possess a comparative advantage in diversifying risk, the residual control and the residual payoff should belong to them.

These proposals do not take into account that most companies nowadays gain their competitive advantage with knowledge investments. As has been widely discussed in the knowledge based theory of the firm (e.g. Grant 1996; Kogut & Zander 1996; Nonaka & Takeuchi 1995; Spender 1996), sustainable, hard to imitate competitive advantages need firm-specific investments in knowledge capital. In contrast to physical work, knowledge work cannot be contracted ex ante when the parties enter a relationship. A knowledge worker cannot sell his or her knowledge as such because of a simple contradiction highlighted by Arrow (1973: 171): The value of knowledge invested in the potential acquirer is not known until after the knowledge is revealed.

Once revealed, the potential acquirer has no need to pay for it. An exception is when knowledge is encapsulated in a saleable product. However, if joint knowledge of different people is necessary to generate a marketable product, this solution does not work. When knowledge has to be combined with other actors' knowledge, managing knowledge work requires incentives other than ex ante contracting, because joint knowledge generated within, or transferred to teams, can neither be contracted nor monitored and attributed to individuals, as is the case with physical work.

As will be argued in this paper, the proposals made by the proponents of the principal agent view, of tying boards more closely to shareholders and relying more on outside directors, are ill-advised for firms where knowledge work is important. In contrast, this paper takes the importance of investments of firm-specific knowledge into account. It proposes the opposite of what has been claimed by principal agent theory:

- Firstly, the board should rely more on *insiders*. The percentage of insiders relative to outsiders should be determined by the relationship of firm-specific knowledge capital to financial capital.

- Secondly, these insiders should be elected by, and responsible for, those employees of the firm making firm-specific knowledge investments. The board should no longer be solely an instrument of financial investors, but also an instrument of knowledge investors, and should have the task of aligning the interests of these constituents. Subsequently, these board members will be called *knowledge directors.*

- Thirdly, the board should be chaired by a *neutral person*. His or her main task is to enable the board members to engage in a productive discourse to the mutual benefit of all

members of the firm. He or she has, moreover, to ensure that the conditions are such that the board members are prepared to contribute to the firm's common good, and to refrain from rent seeking.

The next sections discuss these three proposals in more detail. Thereafter, potential counterarguments are considered and rejected, followed by the discussion of five major advantages of our proposal.

INSIDERS ON THE BOARD

Employees of the firm, especially those who are knowledge workers, have one great advantage over outsiders: They are better informed about the issues and problems concerning the firm's business (Baysinger & Hoskisson 1990;Hillmann & Dalziel 2003).[2] The more important firm-specific and tacit knowledge are, and the more diversified and decentralized the organization structure of a company is, the less knowledge outsiders on the board have about what is really going on in the firm (Child & Rodriguez 2003). Outside directors are able to monitor executives mainly through exerting output control, based upon clearly defined performance targets (Ouchi 1978). They have only limited control over the transformation processes, which help with evaluating the performance when innovative knowledge work is crucial. The more firms are competing on the base of innovations, the more this applies. In times of high uncertainty and rapid change, it is no longer possible to maintain control through targets set by hierarchical control, because targets in these cases have to be re-invented at regular intervals. It follows that control has to be based on a mutually agreed, ongoing revision of goals that are informed by new

[2] This may explain empirical evidence that there is no correlation between the number of outside directors and the financial performance of the firm. See Dalton et al. (2003), Hermalin &Weisbach (2003).

search procedures. Such a control of procedures is similar to the one commonly used in various professions. It is not possible to evaluate the quality of performance from outside, but only from mutual monitoring by insiders.

A second important advantage of having insiders on the board is that it lessens the board's dependence on CEOs for supplying information. Under present conditions, a board dominated by outside directors has to rely largely on information provided by the top executives. In most cases, the CEO sets the agenda for the board. Most of the information that board members receive originated from the CEO. It seldom happens that the board meets without the CEO's presence (Jensen, Murphy & Wruck 2004: 54). Often, the board members are unable to judge whether the information provided is tainted by the executives' rent-seeking considerations. Knowledge workers as directors give the board a well-informed source of inside information not filtered by the CEOs. These inside directors have superior explicit knowledge, as well as tacit knowledge, on the specific issues and problems faced by the firm.

Moreover, it is not in the interest of outside executive directors, who are CEOs of other firms, to seriously challenge the policies, especially the remuneration of executives. It is well known that outside CEOs view the board through CEO eyes, i.e. through a lens, which does not seriously challenge the power of the CEO. For example, a study by O'Reilly et al. (1988) found that, where CEO compensation was concerned, the pay of the compensation committee members was a better predictor than the actual performance of the firm. Thus, the membership of employees in the compensation committees would have a moderating effect upon the mutual hiking up of compensations by the cross-board membership of outside CEOs.

It might be argued that knowledge workers, as employees of the firm, are subservient to the interests of the executives to whom they are subordinated in the firm's hierarchy. But, as we will argue in the next section, these knowledge directors gain a measure of independence by being elected by, and responsible to, the body of knowledge investors in the firm.

REPRESENTATION OF KNOWLEDGE INVESTORS ON THE BOARD

The view of the firm as a nexus of contracts, in which only shareholders carry a residual risk and should therefore have residual ownership and control, is misleading. Firms exist because they can produce what is commonly called synergies (Foss & Iversen 1997) or quasi-rents (Zingales 1998). Quasi-rents represent the difference between what the parties inside the firm generate together and what they can obtain on the market. Quasi-rents are the outcome of mutually specialized assets and people who make firm-specific investments (Rajan & Zingales 1998). These investments, in particular investments in joint knowledge, cannot be protected by contracts *ex ante* when the parties enter into a relationship. They represent transaction specific investments that cause sunk costs once the contract has been made. Moreover, the knowledge investors' *ex post* bargaining position is weakened when the quasi-rents are divided (e.g. by discussing their wages after entering the contract). Their firm-specific investment is of little or no value outside the firm and decreases their outside opportunities (Zingales 1998). It has been empirically shown that employees who are forced to find new jobs lose, on average, 15 percent of their wages (Osterman 1999). If they were employees of the firm for more than 21 years, they lose as much as 44 percent of their wages (Topel 1991). As a consequence, employees have no incentive to undertake such knowledge investments if their firm-specific investments and their bargaining

position are not protected after entering the labor contract. In this context, the firm can be looked at as a nexus of *firm-specific investments* rather than a nexus of contracts. These firm-specific investments create room for bargaining and have to be governed after the contracts have been made. For this reason, corporate governance can be defined as a set of constraints shaping the ex post bargaining over the joint output of firm-specific investments (Zingales 1988). In accordance with Blair & Stout (1999, 2001), we claim that it is the board which has to take over the task of governing the firm-specific investments and mediating between possible conflicting interests of financial and knowledge investors in firm-specific assets which cannot be contracted ex ante. In Blair & Stout's view, the board should act as a neutral third party, which itself is not involved in firm-specific investments. The board should act as an impartial "mediating hierarch" and therefore has to consist mainly of outside directors.

However, this solution neglects two aspects. Firstly, the information asymmetry between management and outside directors leads to the external board members being dependent on executives for information. Secondly, the characteristics of firm-specific investments in knowledge are not taken into account. Knowledge investment must be protected against ex post exploitation in the same way as financial capital is. But, in contrast to financial capital, this investment can only be evaluated by peers who understand the processes involved in the generation and transformation of knowledge. Outside directors can usually only evaluate knowledge investments by judging the financial consequences of knowledge encapsulated in marketable products or projects successfully carried out. They are not able to evaluate the quality of the knowledge process itself, and are thus not able to protect knowledge investors against a deterioration of their bargaining position during the period when joint knowledge has not yet led to a recoverable output.

To solve these problems, we propose an institutional solution: *Both groups – financial and knowledge investors – should be represented on the board*. Other stakeholders and employees with no firm-specific investments can contract their contributions to the firm ex ante. Suppliers of plant equipment, for example, normally retain the equipment as long as they have not received full payment. The claims of employees with no firm-specific investments are also ex ante contractible via market wages. Therefore, these groups do not need protection via representation on the board. In contrast, the whole investment of a shareholder is placed at risk of being a residual claim (Williamson 1985). The same applies to the investors in firm-specific knowledge. To protect them, and to give them an incentive to invest, these groups must be represented on the board.

The relationship of the two groups should be proportional to the relation of investment in financial capital and investment in firm-specific knowledge capital. As a consequence, in a firm in which firm-specific knowledge investment is very important, the board should be mainly composed of representatives of knowledge investors. An example are the employees who made a huge effort to learn "who knows what" in their firm and thus contribute to what is called the firm-specific transactive memory (Wegner 1987; Moreland 1999)**.** This kind of relational capital is lost if such employees have to leave the firm. In contrast, knowledge which has the same value irrespective of the firm in which it is used, should not be represented on the board. Examples are professionals working in consultancies, accounting firms or legal companies, who often have closer relationships to their customers than to their firm. When they decide to work for another company, they often take their customers with them and have no sunk costs. Other examples are unskilled workers, whose activities are similar, if not identical, between firms, like, for example, cleaners.

There are several proposals for measuring knowledge capital (e.g. Bontis 2001; Lev 2001; Lev & Radhakrishnan 2003; Strassmann 1999). To get the firm specific investment of employees in knowledge capital, the knowledge capital must be reduced by a factor which, on the one hand, captures the average reduction in wages employees of the firm would suffer if they have to work in another firm. On the other hand, it should include the average investment the firm has made in the knowledge of its employees. This calculation requires an econometric analysis in which average wage rates in the firm are estimated, depending on a set of individual characteristics of the employees, as well as a variable capturing the time each employee spent in the firm. [3]

We suggest that each employee has a voting right, according to his or her firm-specific investment. It ranges from zero to one. The size of this investment is captured by the estimated individual reduction in wage an employee would suffer if he or she has to transfer to another firm. Employees who suffer no estimated loss from having invested their firm specific knowledge, or who gain an estimated net profit from knowledge investments by the firm, should have no vote. The econometric analysis to calculate individual wage reductions or gains must include a large set of personal characteristics of the employees, as well as a variable capturing the fact of having been an employee of the firm in question. If the coefficient of this latter variable is negative, the employee suffers a loss due to having invested knowledge in the firm in question. In that case, the group of employees meeting these characteristics should have the right to vote according to the size of the coefficient econometrically estimated.

[3] To our knowledge, such estimates have so far not been undertaken.

NEUTRAL CHAIR OF THE BOARD

In our proposal, we envisage a neutral chair, whose task it would be to guarantee an open discussion on the board so that all aspects can be duly considered. He or she should establish, as best they can, what has been called an ideal speech situation (Habermas 1987; Steinmann 1990). In particular, he or she has to see that the procedural rules are strictly observed and that all relevant arguments are heard and considered. The chair should aim at securing consensus on the board, especially when complicated issues are at stake.[4] Unanimous decisions on the board should be required for constitutional issues of the firm (Buchanan & Tullock 1962, Romme 2004). The chair should also decide when it would be useful, and when not, to have the executives partake in the meetings of the board, thus securing the board a further measure of independence. The chair is therefore a specialist in procedures; he or she should not have any voting right in order to exhibit true independence. This can be compared to the task of a judge in relation to the jury.

The neutral chair of the board should be elected by the unanimous vote of its members. This ensures ex ante neutrality and grants him or her independence vis-à-vis any special faction of the board. Therefore, this person should be an outsider to the firm and should not be connected to the firm through previous employment or through any other capacity. Thus, we reject the common practice of appointing former CEOs as chairpersons of the board. [5]

[4] See Nickerson & Zenger (2004), who argue that simple problems can be left to the market, problems of medium complexity to authority-based hierarchy, and complex problems to consensus-based hierarchy.

[5] We side, in this respect, with Jensen, Murphy and Wruck (2004).

POTENTIAL COUNTERARGUMENTS

It could be argued that the proposals made in this paper of how the board should be constituted are lacking in various respects. We discuss three potential major counterarguments.

1. Professionals tend to invest less firm-specific knowledge than other employees, because their higher education allows them to productively use their knowledge in a variety of firms. Higher education means that one has "learned to learn", a faculty which raises flexibility and adaptation to new challenges. Moreover, professionals define themselves to a high degree by following rules and norms developed by the respective professional community of which they are members. These rules and norms are specific to their activity and not to the firm in which they are exercised (Scott 1966; Larson 1979). This allows them to keep valuable outside options open. According to our proposal, if they fail to undertake any substantial firm-specific investments, they should not be represented on the board. This would mean that their considerable knowledge cannot be used to counter the executives' superior knowledge. The board's dependence on information from the CEOs is not overcome.

   This argument does not take into account that, under the present corporate governance system, professionals have little incentive to actively apply and merge their specialist knowledge to any great extent with the specific circumstances prevalent in a particular firm. But our plan to offer them representation on the board provides them with an incentive to invest in firm-specific knowledge. As a compensation for the reduction in valuable outside opportunities, they gain bargaining power in the firm they are associated

with. Thus, the counterargument mentioned starts from a static point of view. In equilibrium, after certain adjustments have taken place, professionals will be represented on the board.

2. It could be argued that a representation of knowledge investors can be achieved within the prevailing corporate governance system. Knowledge investors can be remunerated by equity-based compensation, which makes them shareholders. In that capacity, they can elect persons representing them on the board.

   This argument does not take into account that such shares given to the knowledge investing employees must be restricted in order to hinder a coalition of executives and inside directors from exploiting pure financial investors. Such a coalition could provide incentives for rent seeking and "earnings management", due to the unlimited power of increasing the dependence of outside directors on accessing information. Stock-based compensation, first and foremost, gives an incentive to increase expectations, but not performance (Martin 2003). A coalition of both knowledge investors and executives being shareholders might be unbeatable in manipulating expectations of financial investors to their own advantage. The latter mostly do not understand the processes of knowledge generation in the firm. For instance, they find it difficult to evaluate the emergence and potential of a new technological trajectory[6] in which the firm invests.

   Therefore, knowledge investors owning shares must be forced to restrict any advantages they have from insider information, at least in the same way as executives owning shares. However, it is well known that such restrictions have proved to be ineffective.

[6] Technologies typically evolve along different technological trajectories (Dosi et al.1988; Teece 1987). Usually, only one of these different trajectories will emerge as the dominant design.

Restrictions mean that the respective stocks are not fully tradable and can therefore not be used as part of a risk diversification strategy. As a consequence, they are less valuable to the individual restricted stockholder than they cost the firm as a means of remuneration. It is estimated that, under reasonable conditions, individuals evaluate e.g. a standard option program of less than 60 percent of the cost to the providing firm (Hall & Murphy 2002; Meulbroeck 2000).

3. Our plan might be criticized for being like German co-determination. In German corporations with more than 2000 employees, the board must have a 50 percent representation of the employees[7]. Many economists consider such a legal imposition to reduce firm efficiency considerably (e.g. Jensen Meckling 1979). It therefore seems a bad idea to imitate such co-determination.

However, empirical evidence produces contradictory results. Some authors argue that co-determination reduces efficiency (e.g. FitzRoy & Kraft 1993), while others find that it raises efficiency (e.g. Zwick, forthcoming). A comprehensive survey of the existing empirical literature finds neither negative nor significantly positive effects for co-determination on firm performance (Addison, Schnabel & Wagner 2004). In any case, the empirical analyses do not differentiate the effect of co-determination according to the importance of firm-specific knowledge investments. Moreover, it is important to see that our plan is purely voluntary and should be adopted by shareholders because of its efficiency enhancing quality. It aligns the interests of knowledge investors with those of financial investors in knowledge intensive industries. In contrast to our proposal, specifying a representation of employees according to the extent of knowledge

[7] The chairperson of the board, who is elected by the shareholders, has a double vote in the case of conflict.

investment, the rigid requirements of German co-determination law imposes a fixed percentage of employees on the board. This regulation, in general, leads to few knowledge investors represented on the board. Our plan provides an incentive to undertake knowledge investments and therefore raises the efficiency of the firm.

ADVANTAGES OF OUR PROPOSAL

1. Countervailing the dominance of executives

It´s worth repeating our plan´s greatest strength. Insiders with their intense familiarity with internal processes, as well as with internal tacit knowledge, can monitor the executives more efficiently than outsiders, because they are less dependent on the information given by the executives. In addition, their function as representatives of the employees strengthens participation and self-governance by the corporate community as a part of corporate governance. Anyone breaking the rules is more easily identified by colleagues than by superiors, and can be informally admonished. This has the express function of ensuring that others are doing their part in contributing to the firm's common good, and are refraining from rent seeking. One of the most important common goods inside companies is corporate virtue. This entails a generally shared notion of what business honesty is about and behaving correctly, even when not being watched or sanctioned formally (Osterloh & Frey 2004). In contrast, in the case of the corporate scandals involving Enron and WorldCom, it is well known that dishonest behavior of top management was common knowledge among employees (Spector 2003). But formal as well as informal blaming of malpractice or whistle-blowing was the exception rather than the rule. External directors have neither the necessary information to uncover misbehavior nor are they sufficiently

trusted to be addressed by the employees; they are considered to be representatives of the shareholders and, as such, their opponents rather than their confederates.

Another advantage of having insiders on the board stems from the insight that the control undertaken by peers or insiders in the form of process control is less seen as an external surveillance and more seen as having a supporting function. As has been established by crowding theory (Frey 1997; Osterloh & Frey 2000; Frey & Osterloh 2002), an intervention perceived to be controlling undermines intrinsic work motivation, while a procedural control by experts is perceived to be supporting (Gittell 2000) and fair (Bies &Shapiro 1988), crowding in intrinsic work motivation.

2. Providing incentives for knowledge investors

Employees have a stronger incentive to become knowledge investors, i.e. to invest in firm-specific knowledge capital. This incentive is particularly important for highly educated professionals who, under the present corporate governance conditions, have little incentive to become more fully engaged with the firm they are working for. Investing in firm-specific knowledge reduces their outside options and thus their bargaining position inside and outside of the firm.

These missing incentives stand in sharp contrast to the emphasis on firm-specific knowledge as the most important competitive advantage, which is hard to imitate. In contrast, our plan to provide these incentives contributes to building up firm-specific knowledge capital and therewith leads to sustainable efficiency rents to firms. Our proposal helps to overcome one important

criticism of the knowledge based theory of the firm, namely that it disregards the incentives individuals would have to generate and transfer knowledge[8].

3. Strengthening intrinsic work motivation and loyalty to the firm by distributive justice

Representation of knowledge workers on the board helps to prevent their exploitation by executives and shareholders. Many employees, in particular knowledge workers, are to a considerable extent intrinsically motivated. To be creative, knowledge work needs autonomy (Amabile 1996), which is the most important condition for becoming intrinsically motivated (Deci & Ryan 2000; Frey 1997). But such intrinsic motivation is undermined if individuals feel unfairly treated or feel exploited, as the conditions of distributive justice are disregarded (Osterloh 2005). At the same time, loyalty to superiors and the firm as a whole is reduced, as the literature on psychological contracts (Rousseau 1995) and Organizational Citizenship Behavior (OCB) impressively shows (Organ & Ryan 1995). To ensure that distributive fairness can be exercised, the respective authorities able to judge who has contributed what to the body of firm-specific knowledge must be represented in the top decision making unit, the board. As has already been argued, external directors are not able to perform this job. They normally cannot judge the quantity and quality of knowledge work itself. They are only able to evaluate the financial effects of knowledge encapsulated in marketable products or projects successfully carried out. Only participants in the knowledge process – who must therefore be inside

[8] With regard to this criticism, see e.g. Dosi & Marengo (2000), Osterloh, Frey & Frost (2002).

knowledge workers and peers – have a good chance of successfully performing this job and being perceived as acceptable evaluators by their colleagues.

4. Strengthening intrinsic work motivation and loyalty to the firm by procedural justice

Individuals' intrinsic work motivation depends largely on perceived procedural justice, and not only on distributive justice (Tyler & Blader 2003; Frey, Benz & Stutzer 2004). Our proposal entails an institutional safeguard for procedural justice in the form of the neutral chair of the board being an outsider not involved in firm-specific investments. This person, elected unanimously by all other members of the board, but without voting rights on the board, has the function of an impartial mediator. He or she is institutionally safeguarded against being subjected to the "self-serving bias". Even honest people are subject to such an unconscious bias, which conflates judgments of what constitutes fairness with what is beneficial for oneself. Unlike conscious corruption, such conflation cannot be deterred by sanctions (Babcock & Loewenstein 1997; Bazerman, Loewenstein & Moore 2002). Instead, it can be reduced, by lowering the incentives to take care of one's own interests. This is exactly what the institution of the neutral chair of the board ensures and what makes him or her a credible mediator for the shareholders, knowledge workers, and executives alike.

5. Ensuring diversity on the board while lowering transaction costs

The neutral chair has a second important function on the board. On the one hand, representation of shareholders and knowledge workers ensure that a great diversity of aspects is represented on the board. Such diversity is considered to be important in making wise strategic decisions, in particular in diversified and decentralized organizational structures (Child & Rodrigues 2003). On the other hand, diversity of interests and control rights raises the transaction costs of decision-

making on the board (Hansmann 1996), a disadvantage which needs to be counterbalanced by the advantages of having diversity. The neutral chairperson, as a specialist in procedures or a "facilitator" (Grandori 2001), is able to find generally acceptable solutions to conflicting issues.

CONCLUSIONS

The dominant theory of corporate governance, principal agency theory, does not sufficiently take into consideration that the key task of modern corporations is to generate, accumulate and transfer firm-specific knowledge. It does not differentiate between firms producing in a traditional way, based on industrial work, and firms based on knowledge work. Instead, it should be taken into account that, in modern corporations, knowledge capital is just as important, if not more important, than financial capital. In traditional agency theory, it is claimed that only the returns of corporate financial cannot be contracted ex ante and therefore must be given residual claims and residual control. This means that the board, as the top decision-making unit in the firm, should be composed solely of representatives of corporate financial capital. Agency theory therefore proposes that to overcome the widespread corporate scandals and misbehavior, the interests of top management and directors should be increasingly aligned to shareholder interests, e g. by linking compensation closely to performance, making the board more responsible to shareholders, and strengthening the monitoring of top management by independent outside directors.

This paper argues that, taking the importance of knowledge work into account, the reform of corporate governance should go in a different direction. Knowledge investments, in particular firm-specific investments, are, similar to financial investments, not ex ante contractible. Firm-

specific knowledge investments are the essential basis for a sustainable competitive advantage. To produce what is commonly called synergies or quasi-rents, financial and knowledge investments must be combined. As a consequence, the quasi-rents need to be divided up in a way perceived to be fair by the participants. In particular, knowledge investors should not feel exploited, otherwise they will refuse to make firm-specific investments, and will prefer to make investments in outside options. Corporate governance must secure their ex-post bargaining position, once the (necessarily incomplete) labor contracts have been fixed. It is the board which has to take over this task.

With this end in mind, this paper advances three specific proposals:

1. The board should rely much more on *insiders*. The percentage of insiders relative to outsiders should be determined by the relationship of firm-specific knowledge capital to financial capital.

2. The insiders are to be elected by, and responsible for, those employees of the firm making firm-specific knowledge investments.

3. The board is to be chaired by a *neutral person,* whose main task is to enable the board members to engage in a productive discourse to the mutual benefit of all members of the firm. He or she also has to make sure that the board members are prepared to contribute to the firm's common good and refrain from rent seeking.

While arguments may be raised against these proposals, they have the following major advantages over the reform suggested by principal agency theory:

- they countervail the dominance of executives,

- they provide incentives for knowledge investors,
- they strengthen intrinsic work motivation and loyalty to the firm by distributive as well as procedural justice, and
- they ensure diversity on the board while lowering transaction costs.

These proposals for reforming the board may help to overcome the crisis corporate governance is in. At the same time, they connect agency theory with the knowledge-based theory of the firm.

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