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ABSTRACT

The changing nature of the corporation forces us to re-examine much of what we take for granted in corporate governance. What precisely is the entity that is being governed? How does the governance system obtain power over it, and what determines the division of power between various stakeholders? And is the objective of allocating power only to enhance the returns of outside investors? In this paper we argue that, given the changing nature of the firm, the focus of corporate governance must shift from alleviating the agency problems between managers and shareholders to studying mechanisms that give the firm the power to provide incentives to human capital. We also provide some examples of the kind of subjects that should now be the main focus of study in corporate governance.

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The publication of “The Modern Corporation and Private Property” in 1932 by Adolph Berle and Gardiner Means set the terms of the modern debate on corporate governance. Berle and Means focused on the separation of ownership and control in large corporations where multiple layers of salaried managers coordinated production and distribution. What is perhaps less well recognized about their work is that the large public corporation had only recently become the dominant way of organizing production in the United States (see Chandler (1977)). The book was therefore prescient in that it recognized this way of organizing the enterprise would be lasting, and hence it was important to study how they would be governed.

At that time, the archetypical public firm was General Motors. The enduring fascination with this firm has been, in part, because of its size and the industry it is in, and, in part, because it was the focus of two of the best known managerial books, Alfred Sloan's *My Years with General Motors* and Peter Drucker's *The Concept of the Corporation*.

GM was, and in large part still is, a vertically integrated firm, which owned and controlled a large amount of highly specialized inanimate assets, ranging from plant and

machinery to world famous brand names. In the past, as we will argue, these assets were very hard to replicate and were primarily what made the firm unique. The human capital of employees was, in large part, tied to these assets and immobile. Thus ownership of unique inanimate assets was the primary source of power in the corporation. Moreover, since ownership rights were delegated to the top management by dispersed shareholders, there was a tremendous concentration of both power, and the rents generated from production, at the top of the organizational hierarchy of the vertically integrated organization.

It should come as no surprise that the corporate governance debate developed as it did. The entity being governed, the firm, was stable and well defined, with its boundaries represented by the ownership of unique assets. The fundamental issue in corporate governance was how the surplus that accumulated at the top of the organizational pyramid could be prized out from the sticky fingers of top management and given to the rightful owners, the dispersed shareholder. We say "rightful" because, after all, top management came into the surplus largely because shareholders delegated to them rights over the firm's unique assets, which were the primary source of the surplus.

The nature of the firm in the United States in particular, and the world in general, is changing. Large conglomerates have been broken up and their units have been spun-off as stand-alone companies. Vertically integrated manufacturers have relinquished direct control of their suppliers, and moved towards looser forms of collaboration. A steel manufacturer like Nucor, for instance, has abandoned the tradition of backward integration typical of its industry and out-sourced the entire supply of raw material

(Holmstrom and Roberts, 1998). Even GM is changing its internal structure, having recently proposed to spin off its major parts supplier, Delphi.

But perhaps the most significant change has been to human capital. Recent changes in the nature of organizations, the extent and requirements of markets, and the availability of financing have made specialized human capital much more important, and also much more mobile. But human capital is inalienable, and power over it has to be obtained through mechanisms other than ownership. As the importance of human capital has grown, power has moved away from the top and is much more widely dispersed through the firm.

The changing nature of the corporation forces us to re-examine much of what we take for granted in corporate governance. What precisely is the entity that is being governed? How does the governance system obtain power over it, and what determines the division of power between various stakeholders? And is the objective of allocating power only to enhance the returns of outside investors? The study of governance today has to go beyond the Berle and Means framework of simply determining who owns, and whether the true owners can exercise their rights adequately.

This paper will take a small step towards, what is no doubt, an extremely (perhaps overly) ambitious goal. We will first sketch a framework that describes how transactions within the firm differ from transactions within the market. When this framework is applied to the prototypical firm of Berle and Means' time, it suggests why the focus of governance was initially on how to strengthen the rights of outside owners over management. Corporations, however, have changed tremendously. We provide some examples of how the new corporation differs from those in existence at the time of Berle

and Means. Perhaps the most important difference is the increased importance of human capital relative to inanimate assets. We then argue that given the changed nature of the firm, the focus of corporate governance must shift to studying mechanisms that give the firm the power to provide incentives to human capital. We conclude with examples of the kind of subjects that should now be the legitimate focus of study in corporate governance.

I. How Firms differ from Markets.

In the early 1930s, a young British economist, Ronald Coase, visited a number of major U.S. companies including GM, in an attempt to understand the essence of the modern business enterprise. Coase (1937) concluded, in a seminal article, that the distinguishing feature of the firm was its suppression of the price mechanism that prevailed in the marketplace, in favor of the allocation of resources through power or authority. To understand why this could make transactions conducted in the firm more efficient than transactions conducted outside, we have to understand first what we mean by power, where it comes from, and how it affects the efficiency of production.[1]

The economic definition of power

"Power" is a term that is widely used in very different contexts with completely different meanings. So it is useful to define our use of the term. Economists say someone in an organization has more bargaining power if they can get more of the surplus produced by the organization (net of their costs). There are three important ways in which an individual obtains bargaining power over the organization's surplus. The first comes from how tough a negotiator the individual is. For example, a patient negotiator can get more, as can a negotiator who is willing to carry out crazy threats. Since this power is

individual specific, it is generally of little help in understanding theories of institutions.[2] Power can also come from how the rules of bargaining are structured. The first mover could have an advantage, as could one who gets to make the last take-it-or-leave-it offer. Since we will describe situations where bargaining takes place repeatedly over a long period of time, it is hard to ascribe a sustained advantage to one party as a result of how the rules are structured.[3]

Finally, an individual can derive power from the valuable resources she brings to the production process (and, hence, the resources she can threaten to withhold). It is this source of power that sociologists (and, more recently, institutional economists) have emphasized, and will be what we focus on.[4] Thus power refers to an individual's control over valuable resources. But one has to be careful here. One pays a newsagent to deliver a paper every morning. The fact that he does so does not signify that one has power over him since this is a fair market exchange effected through a contract. So we will refer to power as the control over valuable resources over and above that determined through explicit contract in a competitive market. Some examples are in order.

An Example: Ownership as a source of power

Historically, a major source of power has been that conferred by legal mechanisms enforced by law -- what we call de jure sources of power. This may seem strange especially as we have just argued that power should refer to the rights of control over resources that are not specified in voluntary contracts. The apparent inconsistency is

resolved when we recognize that contracts are typically incomplete, and do not specify rights and duties in all contingencies. The law, however, through some legal mechanisms, offers parties control rights in eventualities that are not covered through contract -- what Grossman and Hart (1986) felicitously term the "residual rights of control". For example, guardianship of a child confers on the guardian a substantial amount of decision making power over the child's future, even though none of this is laid out in an explicit ex ante contract.

Perhaps the most powerful *de jure* mechanism offered by the law is ownership. The law allows individuals to own physical assets and intangible assets such as brand names. Not only can the owner contract as she pleases with the organization over the asset, but also ownership gives her the right to specify how the asset is used in situations not covered by contracts. It is this control that gives the owner power in any negotiations over the use of the asset.[5]

So, for example, a worker who owns a van can contract with the organization on how it is to be used. And if a holiday, not specified in the original contract, intervenes, she can decide to allow the organization to use the van, or she can drive away on a picnic. If the van is valuable to the production process and cannot be easily substituted, her residual rights of control give her power.[6]

Of course, the owner’s power depends on how great her residual right of control is (i.e., how many important contingencies were left unspecified in the original contract) and how unique the resource is, i.e., how costly it is to replace the van.

Why Does the Allocation of Power Matter?

Why does the allocation of power matter? If agents could write all possible state-contingent contracts at no cost and ensure that these contracts are not renegotiated, then the allocation of power does not matter. In such a world all relevant decisions would be made ex-ante, and the allocation of power will have distributional consequences but no efficiency consequences.[7] In other words, once every contingency can be anticipated and contracted over up front, and the legal system can fully enforce contracts, there is little room for the exercise of power.

In practice, however, contracts are not fully contingent and the law is not enforced perfectly, so organizations have to negotiate about rights and duties all the time rather than simply adhere to a contract. Power affects outcomes in these negotiations.

There are at least three reasons why the allocation of power affects efficiency. First, the more power an agent has, the larger the amount of surplus she gets, which, in turn, affects her incentives and thus her decisions. This effect on incentives can be of two types. When an agent has power, she becomes confidant that she will get a substantial share of the surplus from a relationship with the organization, even though she knows contracts do not protect her adequately. This is the "average" effect of power, and it may induce an otherwise reluctant agent to enter a relationship.[8] Power can also increase with the specialized investment the agent makes (or the effort she exerts), and this will increase her incentive to invest. This is the "marginal" effect. Since specialized investment can improve the functioning of the organization, the appropriate allocation of power can enhance the organization's efficiency.[9] Ownership may be one way of allocating power to agents so that it has beneficial average and marginal effects.[10]

Second, the allocation of power affects the feasible set of punishments that are imposed on an agent who does not behave in a way that enhances firm value. While the owner of an essential asset cannot be excluded from the organization even if her human capital is not valuable to the organization, a non-owner can (and will) be excluded from participation if somebody else is the owner. Since the non-owner can be punished more easily, and the threat of punishment can enhance the non-owner's incentives to specialize to the organization, the allocation of ownership and, hence, power, has a clear effect on the organization's productive value.[11]

Third, power may itself be necessary to prevent inefficient jockeying for power. In large organizations, for instance, there are some tasks that confer a disproportionate amount of power on the people who undertake them.[12] There is an excessive desire to specialize in those tasks and too little incentive to specialize in other important tasks that generate less power.[13] An analogous situation is movie casting, where every actor would like to play the main character, and nobody the bit roles. Yet the movie will not work without good performances by supporting actors. As in a movie, this allocation problem is not resolved by prices (in fact the main character is generally paid more than the others), but by fiat. By allocating roles, the movie director prevents an improper allocation of talents. Similarly, in a firm, top management uses its power to allocate tasks so that the specialized investments by employees are coordinated towards the common good.[14]

II. The Traditional Corporation in the time of Berle and Means.

Until the middle of the nineteenth century, the U.S. (and world) economy was mostly composed of small, manager-owned businesses that rarely had more than a hundred employees. It is only with the advent of the second industrial revolution that a new organizational form emerged: what Chandler (1977) calls the *modern business enterprise (MBE)*. By the end of the 1920s MBEs dominated most sectors of the U.S. economy.

It was the realization of the dramatic possibilities in this form of organization that spurred Berle and Means's analysis. Thus, it is important to review the main characteristics of the MBE and how they affected the debate on corporate governance.

As Chandler (1990) argues, the primary advantage of the MBE was its scale and scope. The MBE had the cost economies from size and the extensive brand image from mass advertising to pose formidable competition to new entrants. As a result, competition in the final output market was limited.

A related characteristic of the MBE was the great extent to which it was vertically integrated. Many of these firms were set up when their industry was young, and few suppliers or customers of intermediate goods existed. Presumably, these could not be persuaded to set up because all they could see for the foreseeable future was a monopolist buyer or supplier. Whatever the reason, firms had to integrate both upstream and downstream to ensure the right level of throughput (see Chandler (1977)).

One consequence was that most of the transactions involved in the production process took place within the firm. The few transactions that took place between the firm and the outside were largely at arm's length (as between the firm and the final consumer). Thus the realm of transactions governed by power rather than prices tended to coincide

with the legal boundaries of the corporation. Hence, the MBE is often referred to as the modern corporation (which, not coincidentally, is half the title of Berle and Means' book).

Another consequence was that each industry came to be dominated by a few, vertically integrated giants, with few independent suppliers in intermediate markets. Interestingly, once the pattern of limited competition in intermediate markets was established, it was probably very hard to break out of it. The vertically integrated firm would typically have its own distinctive standards. Any supplier of intermediate products would have to produce a very specialized product with only one likely buyer -- not a prospect that would elicit much investment!

The absence of competition in the intermediate markets lead to several organizational consequences. The absence of market signals or competitive pressures at the intermediate levels created the potential for organizational slack. This had to be controlled via a rigid command-and-control system. Such a system was feasible because the scarcity of competitors, and the absence of industry-wide standards, together implied a thin outside labor market, able to use (and pay for) the skills that employees acquired on the job. Through its control of the firm's assets, the headquarters effectively controlled the main source of employment open to their specialized employees. This gave top management enormous power, and lead to an accumulation of organizational surplus at the top. So much so that once the command-and-control system of the MBE was in place, the main problem became one of how to guarantee enough power to employees who specialized, so as to motivate their specific investments.

In large part, organizations achieved this by creating steep organizational hierarchies, where top management communicated with lower management only through intermediate managers in the hierarchy. Not only was this organizational pyramid necessary to co-ordinate the enormous organizations, but also intermediate positions in the hierarchy accumulated some power because they were the channels through which top management communicated with, and controlled, the mass of lower-level employees. In other words, the steep hierarchy was a way for top management to cede some power to intermediate management by giving them control over some resources (the lower level employees). Higher positions in the hierarchy were associated with higher rents and were a reward for employees who dedicated themselves to the organization (for a model along these lines see Rajan and Zingales (1998b)).

But in general, given the limited alternative opportunities for specialized human capital, and the difficulty of reproducing the mass of inanimate assets these corporations had created, the critical resource was inanimate assets, to which the human capital of employees was, willy-nilly, tied. As a result, the legal claims over assets became the most important source of power.

The last defining characteristic of the MBE was the emergence of salaried managers and absentee owners. The economies of scale and scope, which provided to the MBE its major comparative advantage, made the firm too large to have ownership rest only in the hands of management. Outside investors were needed to finance assets of such size and to bear the risk associated with such large ownership stakes.[15] At the same time, the command-and-control system depended heavily on the specific assets owned by the corporation. Outside owners could delegate control to salaried managers, because the

outside owners retained the threat of withdrawing the assets and making management (and operations) impossible if the top managers were not pliable. Hence, Berle and Means (1932) were primarily concerned about the problems that arose when the outside owner was too dispersed to exercise control over top management, and not about whether they had any tools to control managers with.

Summarizing, there are three main features of the MBE that shaped the ensuing debate on corporate governance. First, the MBE was well defined by the ownership of assets. The *legal* boundaries of the corporation could be drawn around these assets and also coincided with its *economic* boundaries. Moreover, these boundaries did not change unless ownership changed. Since the boundaries were well defined, the main issue in corporate governance was how the surplus generated within these boundaries was to be allocated, and not on how to preserve and protect the boundaries.

Second, the MBE typically required more investment and more risk-taking than within the capacity of the management. Moreover, outsiders could obtain power by virtue of their ownership of the crucial assets. As a result, the MBE came to be owned by outsiders.

Finally, the concentration of power at the top of the organizational pyramid, together with the separation between ownership and control, made the agency problem between top managers and shareholders *the* corporate governance problem.[16] Whether managerial compensation is aligned with shareholder wealth maximization, whether boards are independent, whether Poison Pills are in the interests of shareholders -- these are the kinds of questions that have dominated the corporate governance debate in recent

years. But while these issues are being debated, the firm itself has changed dramatically from Chandler's MBE.

III. Changes and Cause of Changes

There are powerful forces at play that are changing the nature of the firm. These forces have had two important, and intimately related, effects: they have increased the importance of human capital relative to inanimate assets, and they have lead to the break-up of the vertically integrated firms. In this section we describe the forces, using the example of the financial sector where these changes are especially clear-cut.

An Example: The Financial Sector

The financial sector is one area where the relative importance of human capital has increased tremendously. For instance, Rebecca Demsetz of the New York Federal Reserve finds that the share of employment of low-skilled workers in banks declined from an average of 60.4% in the period 1983-86 to 52.5% in the period 1993-95. Correspondingly, there is a move away from workers without college degrees towards workers with college degrees. While Demsetz finds an economy-wide trend in the increasing employment shares of highly skilled workers, she finds the effects particularly pronounced in banking.[17]

Why is this happening? One possible explanation is simply the increased automation in banking (or, in the jargon, "skill biased technological change"). But there is another explanation that may complement this. To a large extent, the banks' primary asset

used to be the ability to raise money from captive depositors and channel credit to customers who had little choice. Outside owners could own this asset by virtue of their ownership of the bank's charter. And top management's control of this asset gave them authority over loan officers. While the credit evaluation skills of the loan officer mattered, they were of secondary importance to the funds that the bank placed in her hands to lend. Without the funds, the officer had little value. And regulatory restrictions on competition meant there were not many banks competing in the same region to which she could transfer her skills if the bank let her go.

Technological change, especially the improvement in communications technology, and institutional change, such as the advent of credit rating agencies, have loosened the link between depositors and the local bank. And markets have become more able to track and evaluate the performance of firms directly, without recourse to an institutional intermediary. Competition from markets and other institutions has meant that the ability to channel funding is no longer the critical asset it once was. As a result, the importance of the loan officer has changed. Rather than simply keeping her hand on the spigot controlling the flow of funds, she has to create new ideas for structured financing for firms that will attract their attention in an increasingly competitive and crowded market. Innovative and customized deals are the source of profits now rather than the old plain-vanilla loan that is now a commodity. The loan officer's human capital, both in terms of her product and industry knowledge, and her client relationships, has become an important source of value to the commercial bank.

But this raises enormous problems of external and internal governance. It is no longer clear who owns one of the most critical assets, the client relationship (and it is

clear that the loan officer, and not the bank's owners, owns her human capital). Banks that have attempted to force their officers to share their relationships with other parts of the bank so that more products can be "cross-sold", have often faced subtle sabotage. The more savvy banks have first sat down with their own loan officers to negotiate about who owns the relationship.[18] These negotiations would never have been necessary in the past, when the ownership of the bank charter (and hence the access to critical funds) gave top managers substantial authority over lower managers, and outsiders authority over management.

The growing importance of human capital at the expense of other, more tangible, assets makes it hard to keep the vertically integrated firm intact because it weakens the command and control system that emanated from the ownership of inanimate assets. Consider another example. Salomon Brothers' bond trading group in the late 1980s and early 1990s consisted of extremely talented traders and ``rocket scientists" (Ph.D's who used mathematical models to uncover mis-pricing of financial assets that could be profited from) who made enormous sums of money for Salomon. But there was not much that Salomon gave them other than its capital and name. As we have argued above, capital became easily available elsewhere, so Salomon became less and less able to control the group, and had to fork out enormous salaries and bonuses just to keep it happy.

And in 1991, a misguided attempt to corner the Treasury bill auction by a member of the group led to an enormous loss of capital and name to Salomon. Even though John Meriwether, the head of the group was fired, this had little long run punitive effect. Over time, a number of talented traders, responsible for 87 percent of Salomon's profits

between 1990 and 1993, left Salomon to join him in a new venture, Long Term Capital Management.[19] For good reason, this became known as Salomon North. The bonds of human capital proved much stronger than the bonds of ownership, a fact that even Salomon's CEO did not realize.[20] So what exactly were the boundaries of Salomon?

From a legal standpoint, the bond-trading group was an integral part of Salomon. Certainly, the public thought so and penalized Salomon for its actions. But if we take the standpoint that the boundary of the firm is the point up to which top management has the ability to exercise power (rather than persuade only through monetary rewards), the group was not an integral part of Salomon. It merely rented space, Salomon's name, and capital, and turned over some share of its profits as rent. The reduced importance of inanimate assets like capital, relative to the traders' human capital, led first to Salomon's implicit loss of control, and eventually to its explicit loss of control over the group.

More Generally…

More generally, the changes in the financial sector are mirrored in almost every industry, and in many rich countries. A recent study by Machin and Van Reenen (1998) finds that the relative demand for skilled workers has increased in all seven OECD countries investigated.[21] This is partly because technology has changed to require more skilled labor. But technological change does not occur in a vacuum, and undoubtedly, the changes in industrial organization and organizational structure have had no small effect.

Vertically integrated organizations that enjoy rents because their assets, brand names, or even government charters, give them an unassailable position in the industry are becoming creatures of the past. Improvements in financial markets have made it easier to finance large investments, so capital intensity is no longer a source of protection

against competition. Cross-border trade has expanded market size tremendously, and firms that were once oligopolists with a tremendous first mover advantage in their own small domestic markets, now fight it out in a larger, competitive, world market. Communication costs have fallen dramatically. Old brand names need constant reinvestment so as to maintain their salience in an increasingly noisy world. At the same time, new names, if sufficiently distinctive, can quickly carve out a niche. In the past, the Yahoos of today's marketplace would have spent years in obscurity, earning their stripes. These changes have increased competition at all levels. But increased competition at the intermediate goods level, in particular, has coincided with the break down of the traditional vertically integrated firm.

It is hard to tease out what caused what since almost everything has happened together in a short span of time. But here is a reasoned conjecture. As markets became more open, vertically integrated firms in the United States faced competition from firms that were differently organized. For example, firms (say from Japan) that have a tradition of outsourcing at the intermediate level, developed a few independent local (U.S.) suppliers for their U.S. factories. The suppliers were willing to make large investments because the Japanese firms had a reputation for fair treatment of suppliers in Japan. The presence of viable, competitive, independent, intermediate goods producers placed strong constraints on the ability of top management in the vertically integrated hierarchy of the U.S. firms to exercise command and control. For one, employees at intermediate levels in their own firms had alternative sources of employment, so the vertically integrated firm had much less power over them. An employee who thought headquarters was too heavy handed would simply quit. Thus control at a distance became much more difficult.

Moreover, internal units could benchmark their performance against the outside. Units in the vertically integrated firm that performed well now realized the bottlenecks created by poorly performing units. Clearly, they were upset if their performance and compensation was held hostage to the performance of the worst-performing unit. But such forced cross-subsidy is an unavoidable outcome if the vertically integrated firm does not source outside. Again, upset managers could leave easily.

Finally, a vertically integrated firm that did not produce at the optimum level at each stage faced much stiffer competition from less integrated competitors, who could buy from the best. In summary, the opening of a competitive market for intermediate goods reduced the ability of the vertically integrated firm to control its remote units, while at the same time making transparent the cross-subsidies implicit in the system. This put pressure on the firm to break up, and also forced whatever remained integrated to standardize intermediate products so that it could benefit from competitive suppliers. The break-up of integrated firms combined with the lower barriers to, and costs of, entry further increased competition at all levels, accentuating the forces at play.

An immediate consequence is that the firm's human capital, as represented by its employees, has become much more important. First, as competition has increased, physical assets have become less unique and employees have many more outside options. This is reflected in the economy-wide diminished expected length of tenure in any single job. Second, a firm has to be distinctive in terms of its costs or quality to make money in the competitive market place. This has increased the importance of innovation, not just as represented by R&D but also reflected in process innovation and quality improvement. Innovation comes from human capital, not from inanimate assets. So at the same time as

employees have been unshackled by the competitive market, they have also become more important to firms.

The growing prominence of corporations where physical assets are unimportant relative to human assets raises a number of new issues of governance. Where do outsiders get authority from, especially because human capital is not ownable? What determines the boundary of the firm? Where does top management get authority over subordinates?

IV. Power In a Human Capital Organization

We argued earlier that power comes from control over valuable resources. However, the law does not allow a person to be bought or sold without her consent (except to a limited extent in sports). Furthermore, even if an agent sells her labor, she cannot sell it irrevocably for a long period. Thus the individual cannot pledge the residual control rights over her human capital to someone else for any significant length of time through contract.

Control over valuable human capital would seem then to be a greater source of power than control over physical assets since almost all control rights over it are residual, i.e., not allocable through contract.[22] But it poses new challenges. Since *de jure* mechanisms are of little direct use in offering residual rights over human capital, how does a firm obtain control over a unit that is composed entirely of human capital when the law does not help in this matter?

Complementarities.

The answer lies in building links between the person or unit that the firm seeks to have power over, and the firm. Not any link will do, what is needed are links that cause

the person or unit to be better off voluntarily following the firm's commands rather than going their own way. Economists call such a link "complementarity". More precisely, a complementarity is said to exist when the unit and the firm can together create more value than they can going their own separate ways. Once the complementarity exists, the unit may obey orders from the firm for fear that disobedience would jeopardize the joint value they can create together. More generally, while ownership legally links an inanimate asset to a firm, complementarities economically link some person or unit that cannot be owned to the firm.

One form of building complementarities is through specialization. It is useful to distinguish at this point between technical specialization and firm-specific specialization. Technical specialization is specialization to the technology necessary for production in an industry. For example, a machinist in the aircraft industry may work with a special kind of lathe, and his skills may be valuable only for the high precision needs of the aircraft industry. An individual or unit that is technically specialized is tied to the industry, but not to a specific firm unless the industry is a monopoly. Firm-specific specialization is specialization to the idiosyncratic needs of the firm. For example, a supplier may invest so that his software can communicate with the firm's special order processing computer. This sort of specialization ties the individual or unit to a specific firm.

Berle and Means' (and Chandler's) vertically integrated firm existed in what was, at best, an oligopolistic industry. Employees were tied to the firm largely because they were technically specialized. Their incentive to specialize much more was limited because there was a very limited market for their skills.

The advent of competition destroyed technical specialization as a source of complementarity since employees could do as well by joining competitors as by staying with the firm. Paradoxically, this has increased the extent to which employees acquire technical skills since these are now rewarded in the market place.

The enterprise in today's competitive marketplace cannot rely on their employees' technical specialization to acquire power over them. The firm has to get employees or units to make firm-specific investments. But this leads to a problem -- why would employees or units choose to specialize to the firm when they know that this will make them dependent on the firm? Moreover, why would they do so when they can focus on acquiring more marketable technical skills that are rewarded in the industry?

Control over Access.

The solution for the modern enterprise seems to be to create a situation where employees or units know that their rewards will be greater if they make firm specific investments. The enterprise does this by giving key employees or units privileged *access* to the enterprise or its critical resources, so that they have power if they specialize (see Rajan and Zingales (1998a)). Some examples will make the point clearer.

A brokerage firm usually gives brokers leads to new clientele. This is a form of access. At the time of receiving leads, a new broker’s human capital is not particularly valuable to the firm. But over time, he develops the leads into solid relationships with clients. Now the broker’s human capital is very valuable because it is the crucial link between the firm and its clients. Thus by giving a newcomer access to leads, the brokerage effectively allocates valuable residual rights or power to him.

But this allocation is not unconditional. If the broker does not invest in the leads and develop them into fruitful relationships, his human capital does not become valuable. The leads can easily be taken away and given to others. Thus the power that comes from privileged access is contingent on the agent specializing.[23]

The selective allocation of access to key firm resources is what we call a *de facto* mechanism to allocate power. If the brokerage provides enough unique value to clients, the broker is of little value without the firm to back him. By investing in building relationships to clients, the broker builds complementarities between himself and the brokerage, giving it some power over him. But he also has power over the brokerage because he “owns’ the clients. Thus the broker and brokerage achieve a more even balance of power than do employee and corporation in Chandler’s vertically integrated MBE.

What is new is interesting is that the brokerage has to commit to give up power in order to get power. In exchange for committing to share some of the surplus with the broker, it obtains his loyalty, which gives the brokerage power in its interactions with other players. We will explain this in greater detail shortly.

We have discussed controlled access as means of allocating power to employees. It could also explain the new forms of customer-supplier relationships that are supplanting the old vertically integrated firm. For example, Toyota has a system where two independent suppliers are offered privileged access to Toyota’s technical specifications, and its latest innovations including, on occasion, the research findings of

the competing supplier.[24] On their part, suppliers are required to invest to meet Toyota's needs. Suppliers who specialize thus acquire a certain degree of market power ex-post because they are only one of two capable suppliers. But Toyota does not promise them a fixed share of its business forever. Instead, it shifts quotas among the suppliers in proportion to how efficient they are.

By restricting access to only two suppliers, Toyota gives them the possibility of acquiring power. But the amount of power they actually get depends on how much they invest. In effect, Toyota creates a form of managed competition, whereby it levels the playing field ever so often by sharing all the innovations among the suppliers. As suggested by Rajan and Zingales (1998a), a policy of creating limited competition between suppliers, and leveling the playing field ever so often, can spur much more specialized investment by suppliers than if the supplier were part of the same vertically integrated firm and confidant of receiving the firm's business.

Why is Access Valuable?

We have cheated a little. We have argued in both examples above that employees or units can be given incentives to make specialized investments which bind them to the enterprise if they are given privileged access. But what makes access worth having?

Certainly, the brokerage could possess some inanimate assets such as a reputation that are a source of surplus, and that is what the new broker desires to attach himself to. Similarly for Toyota's suppliers. But inanimate assets need not be the source of economic surplus that makes access valuable. Instead, the web of past specific investment that creates complementarities between different agents may itself be what is valuable and

worth gaining access to. Moreover, by directing these specific investments appropriately, it is possible for an individual or group to place itself at the center and gain some of the command and control powers that otherwise emanated only from the ownership of critical inanimate assets.

To see this, let us re-examine Salomon's bond trading group. We earlier argued that Salomon had little power over the group. But the group itself may have been a tightly bound unit, connected to each other through specialized investment and responding to the commands of its head. There are a number of reasons why the head of a bond-trading group (the Meriwether equivalent) may have substantial control over its members. For one, he is the focus of the group's outside image, and is the source of their capital. More important, the head would have coordinated task allocations (i.e., controlled access) so that each member of the group is likely to be specialized to some aspect of bond trading. One understands how to uncover bonds that seem under-priced, another knows the institutional details and tax laws that may sometimes create an illusion of under-pricing, while a third has the ability to negotiate for their purchase at a reasonable price. Since each member of the group is specialized in a narrow aspect of bond trading, individually, their skills are not very valuable, but collectively they have immense value. And since the head of the group provides the co-ordination function to all these specialized skills, he becomes indispensable to the group, and effectively obtains control rights. A new member would value access tremendously, and accept the head's task assignments unquestioningly, knowing that the rest of the group is attached to the head, and the group collectively is a well oiled unit generating tremendous surplus. In a sense, by giving limited access to a group member, the head gives her some power over surplus. But once

she is specialized, the head obtains her loyalty, and the collective loyalty of specialized members enables him to command the group, including even unspecialized members.[25]

Distinctive Characteristics of the New Enterprise.

When the ownership of inanimate assets is no longer the primary source of power, mutual dependencies and specialization between various units of the enterprise are what make it distinctive, and allow power to govern transactions. Since ownership is relatively unimportant, and human capital is not tied to inanimate assets, the legal definition of the firm, which centers around the ownership of the inanimate assets, is not very helpful. Instead, the unit of economic organization, which we call "the enterprise", has less distinctive boundaries. Something is more a part of the enterprise when it has greater complementarities with the rest of the enterprise. So Salomon's bond trading group is not really part of the Salomon enterprise, though each individual trader is a member of the bond trading enterprise. Toyota's suppliers are members of the Toyota enterprise even though they are separately incorporated. On the other hand, GM's suppliers, who have traditionally been placed in competition with each other without any privileged access, are not part of the GM enterprise.

Certainly, there will be great reluctance to abandon the idea that a firm's boundaries are determined by the common ownership of assets. There are still a large number of old corporations (though far fewer of the young ones) for which this is the best description of their boundaries. Moreover, this definition is very convenient for jurisprudence for it makes issues such as anti-trust easy to comprehend and act on. But the definition is becoming more and more anachronistic, and will some day have to be abandoned for something like our definition which is less clear cut but more realistic.

Another change is that the surplus in the modern enterprise is no longer concentrated at the top. Since the enterprise gets power over a unit only because it commits to share surplus with the unit, the surplus is shared much more evenly through the enterprise. This democratization of rents expands the job of governance beyond simply watching the top managers.

Finally, unlike in the vertically integrated firm, the enterprise need not be commonly owned. Since no single unit requires enormous investment there is no need to have a large number of investors. Thus ownership and operational control in the enterprise can be much more closely associated than in the past.

Mergers and Acquisitions.

We have argued that large vertically integrated firms are harder to control today, which is why some of them are breaking apart. But what explains the tremendous increase in merger activity in developed economies in the last few years? Is it evidence against our arguments?

A sizeable fraction of the mergers are horizontal mergers. As we have discussed, firms are losing power because of various changes in the market place. Horizontal mergers are an old-fashioned way of regaining power, specifically, market power. This has the benefit of strengthening a firm’s hold over its employees, and recovering some of the command and control that has been slipping away. A horizontal merger therefore postpones the necessity of reconfiguring the governance system to adapt to changes. Of course, there are other rationales for horizontal mergers that have to do with other forces

sweeping industries. For example, they permit easier capacity reduction in a declining industry (see Mitchell and Mulherin (1996)).

But there are some industries where a number of vertical mergers have taken place. For example, in the Media industry, giants like Time Warner or Disney now control everything from content creation to distribution, while earlier they accounted for only one portion of the value chain, movie production. Why is this?

The changes we have described before have not always pushed in the direction of de-integration. For example, in this industry they have had the effect of changing the nature of the critical asset, and thus enhancing its value. A movie is not simply meant to entertain. Instead, a movie is often the media event with which a brand name is launched – and under this umbrella, toys, books, videos, CDs, and clothing are sold. As with all modern brand names, its impact on the public consciousness is for a very limited duration. But during this period, it is very valuable, and substantial investments have to be made through the value chain to enhance it. For example, a movie may have to be shown longer than directly profitable in order to enhance merchandise sales, or merchandise may be sold more aggressively to boost a forthcoming movie.

The critical asset now is the brand name not the movie, and the extent to which it becomes important depends on investments made by each part of the value chain. So rather than one part of the value chain owning the asset, and distorting the incentives of the other parts of the value chain to invest, it makes more sense for the brand name to be centrally owned by headquarters. While the entire value chain belongs to the same firm, each part gains power through specific investments, giving it the incentive to make it (much in the way of multiple suppliers having greater incentive to invest since none has a

monopoly). Conversely, since the brand name is critical to each part, headquarters has control over the value chain.

Finally, it may be somewhat Panglossian to assume that all the mergers we see add to efficiency. For example, commercial banks have spent huge amounts of money trying to become universal banks offering the entire spectrum of financial services. A number of banks (most recently, Barclays) have withdrawn from such an effort after realizing that they simply do not have the ability to control such an operation effectively. Others (for example, Deutsche Bank) persist despite past failures. Only the future can tell which strategy is more efficient, but our theory offers some ways to form priors.

V. Consequences for Enterprise Governance

The main objective of corporate governance was traditionally identified with the maximization of shareholder's value. In a world where the boundaries of the enterprise were well defined and the primary concern was reducing the agency cost at the vertex of the organization, this was translated to imply that the duty of directors was to monitor top management and limit its rents.[26]

The major changes in the nature of firms we have described thus far, however, call for a radical rethinking of the objectives and methods of governance. Applying the old approach to the new type of firms can be extremely costly, as illustrated by the saga of Saatchi & Saatchi.

Old Governance of the New Enterprise: Saatchi and Saatchi.

In 1994, following several years of lackluster performance, U.S. fund managers, who controlled 30 per cent of the shares, opposed the award of a generous option package

to Maurice Saatchi, the charismatic chairman of Saatchi and Saatchi. Together with his brother Charles, Maurice had founded the company in the early 1970s, and built it up through mergers into the largest advertising agency in the world.

The opposition of the fund managers lead to the departure of Maurice Saatchi, and was quickly followed by the resignation of several key senior executives. These executives, together with the Saatchi brothers, started a rival agency (M&C Saatchi), that in a short period of time captured some of the most important accounts of the original Saatchi & Saatchi, including British Airways, Mars, Dixons, and Gallaher. Interestingly, one of the executives who left, wrote in his resignation letter: “I am not leaving the company. The company has left me."[27]The original firm, which later changed its name to Cordiant, was grievously damaged.

In hindsight, the mistake the U.S. fund managers made was to treat Saatchi & Saatchi as a traditional company, with clear boundaries defined by its assets. Because they had ownership (thanks to their 30% holding of the votes) they may have thought they controlled the firm. Instead, much of the firm broke off as they attempted to exercise their traditional ownership rights.

In this new environment, corporate governance becomes a more complex task. To begin with, maximization of shareholders’ value is not necessarily the right objective. The theoretical justification for this objective was derived from the “nexus of contracts” view of the firm.[28] According to Fama and Jensen (1983), each party belonging to the nexus has contractual claims on the surplus with pre-determined payoffs. The exceptions are shareholders, who accept a residual payoff because they have a comparative advantage in diversifying risk. Maximization of shareholders’ value, then necessarily

leads to maximization of the value of the enterprise. But in a world of incomplete contracts and multiple sources of power, the contractual protection provided to the parties in the nexus of contracts is necessarily incomplete. As a result, almost all parties can be, at some time or the other, residual claimants. Maximization of shareholders' value does not necessarily lead to maximization of enterprise value.

Second, even if we were to accept this traditional objective, the ways it should be pursed by directors is very different. In what follows we attempt to outline how the duties of a corporate director might change with changes in the enterprise.

Protecting the Integrity of the Enterprise

A completely new task that directors are, and will be facing, as a result of the changes in the nature of the firm is to protect its integrity. When most of the value of a firm was embedded in assets that could be owned, its boundaries were fixed and there was nothing directors could, or were required to, do to guard them. But now most of the value comes from assets that cannot be easily appropriated, like information or human capital. This raises a new challenge.

As the Saatchi & Saatchi example indicates, directors' actions can affect the boundaries of the firm. It may be too late to intervene when surplus is being divided because directors may have little power to mould the firm despite having ownership. Instead, intervention should come earlier as the enterprise is being put together. It is at this stage that directors should intervene to make sure that customers, suppliers, or employees are not given the opportunity to accumulate too much power, which would allow them to expropriate a large fraction of the value of the enterprise.

For example, banks are linking up with Internet firms to provide better services to customers. A major source of concern is how much access the external providers will have to the banks' customers. Since customer relationships are a major (perhaps the major) resource the banks possess, losing them to the provider might hurt the bank and thus its shareholders more than any agency problem at the top. Similarly, before attempting to fire Maurice Saatchi, Saatchi & Saatchi directors should have anticipated the problem and ensured that the company was not too dependent upon the Saatchi brothers. The exercise of governance is no longer simply a matter of casting a vote, but also may involve a long prior period of organizational design.

In a sense, organizational design is a major service the venture capitalist provides a fledgling firm. At the early stages of the development of an enterprise, when the structure of the firm is still amorphous, it is all too easy for the founder to insinuate herself into every relationship. While this may make the small firm function well, it makes it harder for it to grow beyond the capacities of the founder. Also outside financing becomes hard because the founder controls so much power. One of the roles of the venture capitalist to make sure that the management of the firm is professionalized so that it is not too dependent upon the entrepreneur or any specific professional manager. In this way, they make the firm easier to finance, initially by themselves, and eventually by dispersed outsiders.

We have focussed thus far on issues of organizational design. The new enterprise also may be run very differently. For example, it changes the need, and the tools available, for motivating employees. We conclude with the example of stock options to show how the theory may explain operational changes in the enterprise.

Motivating the Employees

As the control rights associated with the common ownership of a large body of assets have diminished, there has been less need to hold these assets together. As fewer assets are owned together, it has become much easier to use ownership to motivate employees, in part because employees can have a larger stake, and in part because the share price corresponds more closely to factors in their control. Thus while the control rights associated with ownership may have diminished, the role of ownership in providing motivation may have increased.

A case in point are the new knowledge-based high technology companies, where employees are not merely automata in charge of operating valuable assets, but valuable assets themselves, operating with commodity-like physical assets. Reflecting these views, we have heard a founder of a small start-up company say that his biggest concern was to provide the right future reward for key employees, not for the financiers. In fact, employees -- in his own words -- “do not invest a fraction of their portfolio, they invest their life”. Employees need to be motivated or -- to borrow a popular term from the managerial literature -- “empowered”. At the same time, the firm has to ensure that it retains some ability to govern the empowered.

One clever solution to this problem is the award of long-term stock options, which vest over a long period of time. Stock options ensure a share of the rents to the crucial employees. At the same time they do not give them voting power (at least until the time of they are exercised), eliminating potential sources of conflicts (see Hansmann (1996) and Rajan and Zingales (1998a)). Delayed vesting also diffuses the threat of departure of key employees.[29]

This highlights a new important trend in corporate governance: the generalized award of stock options to employees. While there exists a large literature, both theoretical and empirical, on the role played by stock options to reward top executives, the use of stock options to reward lower level employees has received little attention, in spite of the magnitude of the phenomenon.[30]

There are many other changes in the nature of the governance of the new enterprise that deserve further study. We do not have the space here to examine these. But

hopefully we have convinced the reader that the nature of the enterprise has changed, and there is a need to re-investigate the issue of governance.

VI. Conclusions

The terms of the modern debate on corporate governance were set in the 1930s, influenced in large part by changes in the nature of the firm that occurred in the previous fifty years. In those days the dominant model was a vertically integrated firm, controlling a large set of unique assets through a rigid command-and-control system. As a consequence, corporate governance mainly focused on the agency problem at the vertex of the organizational pyramid.

Since then the nature of the enterprise has changed greatly: human capital has replaced physical capital as the main source of value and vertically integrated firms have given way to more competition in the intermediate product markets. We argue that these changes require also a change in the focus of the corporate governance debate. We should spend less time discussing how to strengthen the rights of dispersed owners and more time on mechanisms to control and retain human capital. We sketch some ways in which this new approach could fundamentally change the role corporate directors should play. As the new enterprise becomes more dominant on the corporate landscape, these issues should be studied in greater detail.

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Endnotes

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[*] We benefited from the comments of Carmen Matutes, J. Enric Ricart, and Xavier Vives.

[1] Space considerations will prevent us from doing justice to the rich literature in theory of the firm, starting from classics like Alchian and Demsetz (1972), Klein, Crawford, and Alchian (1978), Williamson (1985) and extending to more recent contributions like Aghion and Tirole (1997), Baker, Gibbons and Murphy (1997), Gertner (1998), and Holmstrom (1998).

[2] We say "generally" because one could construct theories where the institution selects out the toughest or weakest bargainer for certain positions, and this enhances overall efficiency.

[3] There are exceptions. For example, an intermediary has a natural advantage because he can initiate bargaining with either side that he intermediates between.

[4] See Emerson (1963), Pfeffer (1981), and Hart(1995).

[5] There are other *de jure* mechanisms. For example, when an organization incorporates as a corporation, it obtains certain rights over its employees that an ordinary organization would not have. Specifically, the corporate opportunity doctrine restricts the ability of managers to personally take advantage of opportunities that come to them while they are agents for the firm.

6 See Grossman and Hart (1986) for the seminal paper on ownership and power.

7 See Zingales (1998). For an opposite view see Tirole (1998).

8 See Klein, Crawford, and Alchian (1978) or, more recently, Rotemberg (1994).

9 Specific investment can be with respect to the firm's assets (the employee learns to use a specialized lathe or write in a specialized software language). Alternatively, it can be with respect to other employees (the secretary learns to work with his boss).

10 The latter effect is emphasized in Grossman and Hart (1986) and Hart and Moore (1990). In the absence of contracts, each agent's share of the ex-post surplus depends upon her outside option. Whenever the value of the owned asset increases with the owner's investment, ownership increases the outside option of the owner, increasing her incentive to invest. Rajan and Zingales (1998a) argue that the marginal effects of ownership could well be reversed, and reduce the incentive to invest (see later).

11 This effect is not present in Grossman and Hart (1986) or Hart and Moore (1990) where ownership only offers the threat of exclusion, but no one is actually excluded in equilibrium. See Rajan and Zingales (1998a) for an example of when ex post exclusion actually takes place, and the appropriate allocation of ownership can enhance ex ante incentives.

12 This is again true only in a world of incomplete contracts, because otherwise the rewards from undertaking different tasks could be more closely aligned with their costs.

[13] This is related to, but different from, the inefficiency generated by rent seeking (Milgrom and Roberts, 1990). For other applications, see Hirshleifer (1995), Rajan and Zingales (1998c) , Rajan, Servaes, and Zingales (1998), and Skaperadas(1992).

[14] Rajan and Zingales (1998a,b) refer to this role of power as control over access.

[15] These investors could have taken debt rather than equity claims. For a discussion of why they might have chosen the latter, see Rajan and Zingales (1998 a).

16 Consistent with this approach, Shleifer and Vishny (1997) define corporate governance as having to do with “the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment".

17 Also see Machin and Van Reenen (1998).

18 We thank Mark Knez for this example.

19 See Institutional Investor, November 1996, p 62. The saga of LTCM is making headlines even as this paper is being written.

20 Instutional Investor (November 1996, p62) reports a conversation between Derek Maughan, the CEO of Salomon and Rosenfeld from Lazard Freres. Maughan asked Rosenfeld what his worst nightmare for Salomon was. “That the arb people would all leave now that Meriwether was’nt coming back”, Rosenfeld said. According to Rosenfeld, Maughan shot back:”No way. Those guys are all tied to Salomon.”

21 The seven countries are the United States, Denmark, France, Germany, Japan, Sweden, and the United Kingdom.

22 We say almost because employment contracts do give a n employer some rights. For instance, as Masten (1988) argues, there is a legal difference between an employment contract and a contract with a

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contractor. The employee is liable for the process by which work is done -- e.g., he agrees to show up at work every day, work a certain number of hours, and obey reasonable orders. Of course, nothing ensures that the work is done with enthusiasm or efficiency. By contrast, the contractor is held responsible for output but not for the process by which he does it, unless contractually specified.

[23] Unlike ownership which directly bestows residual rights on the owner, access combined with specialization does not create any new rights, but simply enhances the value of the chosen individual's pre-existing rights over her human capital. The net effect is, however, similar: access can be used to bestow power on individual members.

24 This is similar to the customer-supplier relationship typical of technology firms operating in the Silicon Valley. While all firms develop a very close relationship with a limited number of customers/suppliers with which they share crucial information, they also make sure that no customer or supplier accounts for more than 20 percent of the business, to maintain and foster competition (Saxenian (1996)). See also Aoki (1998).

[25] See Rajan and Zingales (1998b) for a more detailed model. The head commits to sharing surplus, and thereby obtains control over access.

[26] See for instance Hermalin and Weisbach (1998).

[27] Valerie Grove, "Maurice Saatchi finds his voice" Times Newspapers Limited, January 5, 1996.

[28] The "nexus of contracts" view of the firm essentially suggests that all parties enter into fixed contracts with the one party who becomes both the residual claimant and the possessor of control rights. Given that he has the residual claim, this party has the incentive to improve value.

[29] On this see also Rodriguez-Palenzuala (1997).

[30] For example, in 1997 Microsoft awarded $400 million (10% of the earnings) in stock options to employees.