

# Economics of Interfirm Networks

Edited by  
THERESIA THEURL

*Ökonomik der  
Kooperation*

4

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**Mohr Siebeck**

# Ökonomik der Kooperation

Band 4

herausgegeben von  
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ISBN 3-16-148601-3 / eISBN 978-3-16-163116-0 unchanged ebook edition 2024  
ISSN 1619-9901 (Ökonomik der Kooperation)

Die Deutsche Bibliothek lists this publication in the Deutsche Nationalbibliographie;  
detailed bibliographic data is available in the Internet at <http://dnb.ddb.de>.

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The book was printed by Gulde-Druck in Tübingen on non-aging paper and bound by Buchbinderei Held in Rottenburg.

## Foreword

Today's firms operate in systems of complex cooperation. This means that the boundaries of the firm are no longer clear-cut, but become rather blurred. The firms act in interfirm networks, i.e. they are part of a larger cooperative system where they do not dispose of complete administrative control over assets, but operate in a stronger interdependency than what is usually experienced in markets. Consequently, the focus of research moves from analyzing the nature of the firm to describing the appropriate boundaries of the firm and to the development of an economic theory of these inter-woven enterprise relations. This shift allows for determining the optimal network structure and the development of strategies on how to manage these alliances and networks. Remarkably, there exists interdependency between the optimal organizational design and its management, since an inefficient and inapt cooperation management may afterwards turn an organizational decision wrong. Cooperatives can be considered as a special kind of network that is applicable for particular tasks and in selected industries. Creating, structuring, and managing these cooperatives prove to be a special challenge, a challenge which should be a focus of research.

This volume attempts to contribute to these efforts by bringing together innovative ideas from highly renowned scholars in the field of organization theory and institutional economics. Oliver Williamson starts by extending his transaction cost analysis to networks. He points out that networks, alliances, or joint ventures frequently belong to the T-forms of organization, i.e. they are merely transitional or – to put it in economic terms – they are a disequilibrium phenomenon. Therefore, it comes as no surprise that they are increasingly found in today's dynamic business environment.

There are two driving forces and overarching trends in today's economic development: the tremendous innovations in information and communication technologies and the increasing globalization of economic relations. Globalization opens new markets for supplying inputs and for selling an enterprise's products and services. Thus, scale becomes more important, presumably favouring large multi-national enterprises. Thomas Straubhaar and Theresia Theurl show that cooperative business strategies may be an option for small and medium-sized enterprises to meet these challenges of globalization. Cooperation may enable them to remain autonomous and to keep their local anchorage while reaping the benefits of scale together with

their partners. Thomas Straubhaar and Theresia Theurl call these enterprises *glocal players*: locally anchored but globally active. Jacques Santer supplements that interfirm networks are necessary for the completion of the enlarged domestic market. The European Union has made significant steps forward for supporting this development by introducing the SE and SCE.

New information and communication technologies completely reshape the way in which we organize business. Thomas Malone claims that these new technologies will lead to a revolution in business organization comparable to the French Revolution in history. These new technologies will allow for the empowerment of the individual worker and thus will democratise business and, by the same token, increase the worker's responsibility. This will decentralize business organization and open new ways to devise innovative (and?) cooperative forms of organization. One such form is the design of virtual networks. Arnold Picot and Rahild Neuburger describe the essential characteristics of virtual networks and how the new information and communication technologies paved the way for this innovative form of organization. Finally, Stefan Klein and Anita Mangan show that not only gaining size while maintaining local anchorage is crucial for successfully managing cooperations, but also the stabilizing of relations within the network. By taking the example of Irish credit unions, they explain that mechanisms like shared values, the governance model, and the embedding in a local community suitably stabilize a cooperation without foregoing the necessary ability for adaptations.

Corporate governance is an issue for any enterprise today. Basically, corporate governance is occupied with the principal-agent relation between shareholders and the enterprise's management and how to protect the shareholders interests. Marco Becht extensively describes the mechanisms of good governance and how they work in controlling the management. However, since firms are no longer clear-cut entities and increasingly cooperate with other firms, an extended view of corporate governance is necessary. Corporate governance transforms to cooperative governance. Theresia Theurl points out that corporate governance in cooperative organizations is a new design task, since property rights become diluted in cooperations. Therefore, the management's control over the firm's asset is weakened. This has to be taken into account when designing the "usual" corporate governance. On the other hand, cooperation implies new principal-agent problems between the cooperating partners. Thus, cooperative governance has to be introduced on a second level. Helmut Dietl, Egon Franck, and Tariq Hassan give an example of such a cooperative govern-

ance: Professional sport leagues consist of autonomous clubs that adhere to self-imposed rules of their sport leagues, i.e. they have created a “cooperative governance codex” (the league’s statute), to which they obey. They demonstrate that a cooperative-style organization is most beneficial for the participating clubs.

The articles of the final chapter focus on managing networks as a new task for corporate management. Jörg Sydow shows how the network management and network development interact. He identifies four crucial functions of network management: selection, allocation, evaluation, and regulation. Tage Skjoett-Larsen then lays down the theoretical framework for managing inter-organizational business relations by applying a transaction cost and a resource-based view to the problem. In closing, he introduces the problem of trust in inter-organizational relations to his approach. Holger Kern applies these findings to the value chains in the financial sector and shows perspectives for the positioning of individual firms in the value chain of the financial industry.

The articles of this volume are revised contributions to the 15th International Cooperatives Forum at the Westfälische Wilhelms-Universität Münster from the 7<sup>th</sup> until the 9<sup>th</sup> of September 2004. I gratefully appreciate the support of multiple persons and organizations that have enabled this conference and have contributed to its success. I would like to especially thank Eric Meyer, Anne Saxe, Tobias Janiesch, and Moritz Boemke for their thorough editing and formatting work. Helpful assistance in translating texts has been received from Grant Dickie.

Theresia Theurl



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## Chapter 1

# The Rationale for Interfirm Networks



# Networks – Organizational Solutions to Future Challenges

Oliver E. Williamson

## *1. Introduction*

Network forms of organization have been variously described. As developed herein, I interpret networks from the transaction cost economics perspective. So construed, networks are closely related to, and many have previously been interpreted as, variants upon the hybrid mode of contracting. I nevertheless concede that economic organization is very complex and is usefully examined from several perspectives – of which the governance of contractual relations, with emphasis on transaction cost economizing, is only one.

I begin with a brief overview of the transaction cost economics (TCE) project. The key moves out of which TCE works are sketched in section 3. The governance of contractual relations, with special emphasis on the hybrid mode of organization, is described in section 4. Network reasoning of hybrid and other kinds is examined in section 5. Concluding remarks follow.

## *2. A TCE Overview*

TCE approaches economic organization as an interdisciplinary exercise in which law, economics, and organization theory are selectively combined and subscribes to the following propositions: 1. governance matters and is susceptible to economic analysis; 2. the transaction is the basic unit of analysis; 3. economizing on transaction costs is the “main case”; and 4. all would-be social science theories should be asked to derive refutable implications and submit them to empirical testing.

The proposition that governance matters resonates with much of organization theory. Because, however, organization theorists failed to make the case that organization mattered in ways that were of interest to economists,

skeptical economists understandably shrugged. Thus although economists and organization theorists had shared interests in firms and other modes of organization, they perceived organization very differently. For economists, the firm was a black box for transforming inputs into outputs according to the laws of technology, the inner workings at which were unimportant. For organization theorists, the inner workings of complex organization were the very essence of the enterprise. These two conceptions were as two ships passing in the night.

TCE maintains that governance matters and can be made susceptible to analysis by naming the transaction as the basic unit of analysis and by taking transaction cost economizing to be the “main case.” Operationalizing this main case hypothesis is where the refutable implications reside.

The stipulation that all would-be theories make predictions and invite empirical testing is understandably resisted by those who favor theories that are weak or lacking in these respects. “Dialogue” between contesting theories is frequently proposed by those whose favored theory is weak or lacking in predictive/empirical respects. I have no problem with spirited discussions, but what to do when such discussions come to an impasse? As discussed below, this is where the cutting edge of prediction comes into play.

### 3. *Key Moves*<sup>1</sup>

I begin with a sketch of the key organizational and contract law features on which TCE relies, next discuss the main case, and then describe the rudimentary logic out of which TCE works.

#### 3.1. *Beyond Analytical Convenience*

The ideal transaction, for both law and economics, is that of simple market exchange, according to which “faceless buyers and sellers...meet...for an instant to exchange standardized goods at equilibrium prices” (Porath, 1980, p. 4).<sup>2</sup> All well and good, for both law and economics, to begin by describing homogeneous transactions with large numbers of informed buyers and sellers on each side of the market. But not all transactions can be so described.

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<sup>1</sup> This and the next two sections are based on my forthcoming paper, “The Economics of Governance,” *American Economic Review*, May, 2005.

<sup>2</sup> The language used by the lawyer Ian MACNEIL to describe these same transactions is this: “sharp in by clear agreement, sharp out by clear performance” (1974, p. 734).

The usual litany of exceptions includes product differentiation, information asymmetries, and economies of scale. Product differentiation gives rise to monopolistic competition; information asymmetries impair informed assessments; and economies of scale can result in monopoly. TCE concedes all of the foregoing but calls attention to transactions that pose an altogether different contractual complication: those for which the preservation of an *ongoing contractual relation* is the source of potential economies, the realization of which can be defeated by conflict (suboptimization).

Transactions of this latter kind are among those to which John R. Commons had reference in his prescient remark that “the ultimate unit of activity must contain in itself the three principles of conflict, mutuality, and order. This unit is a transaction” (1932, p. 4). Not only does TCE concur that the transaction is the basic unit of analysis, but *governance is the means* by which to infuse *order*, thereby to mitigate *conflict* and *realize mutual gains*. Governance, so described, implicates law, economics, and organization theory.

### 3.1.1. Organization Theory<sup>3</sup>

Of the series of key insights that I associate with Chester Barnard (Williamson, 1990), the two that are most important to TCE are his argument (1) that adaptation is the central problem of economic organization and (2) that cooperative adaptations within firms that are accomplished under the auspices of hierarchy (Barnard, 1938, pp. 4, 6, 73).

Interestingly, Friedrich Hayek would also advance the argument that adaptation is the central problem of economic organization. Yet there were differences. Hayek, as an economist, focused on the adaptations of *autonomous* economic actors who adjusted spontaneously to changes in the market, mainly as signaled by changes in relative prices: Upon looking “at the price system as...a mechanism for communicating information,” the marvel of the market resides in “how little the individual participants need to know to be able to take the right action” (Hayek, 1945, pp. 526-527). By contrast, Barnard featured *coordinated* adaptation among economic actors working through administration (hierarchy). The latter is accomplished not spontaneously but in a “conscious, deliberate, purposeful” way (Hayek, 1938, p. 4). Because a high performance economic system must have the

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<sup>3</sup> As previously remarked, organization theory is a diffuse literature. As between the rational systems, natural systems, and social systems approaches (SCOTT, 1987), governance works mainly in the rational system tradition.

capacity to make adaptations of both kinds, provision for both markets (autonomous adaptation) and hierarchies (coordinated adaptation) should be made.

Herbert Simon also had a massive influence upon organization theory, much of it in the spirit of Barnard. Of special importance for the purposes of TCE is Simon's advice to social scientists that "nothing is more fundamental in setting our research agenda and informing our research methods than our view of the nature of the human beings whose behavior we are studying" (Simon, 1985, p. 303). Both the cognitive and the self-interestedness attributes of human actors come under scrutiny.

Simon observed with respect to cognition that "the theory of an organization whose members are 'perfectly rational' ... is very nearly a perfectly vacuous theory. It is only because individual human beings are ... boundedly rational that organizations are useful instruments for the achievement of human purpose" (Simon, 1957a, p. 199). TCE concurs and takes the chief ramification of bounded rationality to be that all complex contracts are unavoidably incomplete, which applies to markets and hierarchies alike.<sup>4</sup>

With reference to self-interest, Simon observed that "it is only because organized groups of human beings are limited in ability to agree on goals, to communicate, and to cooperate that organizing becomes for them a 'problem'" (Simon, 1957a, p. 199), which is partly a manifestation of bounded rationality but is due also to what Simon later described as "frailty of motive" (Simon, 1985, p. 304), according to which individuals occasionally stray from the line.

My position is that frailty of motive adequately describes human behaviour when dealing with *routines* but that additional complications are posed by *exceptions*. Thus although most people will do what they say and some will do more when dealing with routines, outliers (exceptions) pose strains as the stakes become great. Strategic considerations now arise, whence the (normal) spirit of cooperation can no longer be presumed. The relatively benign description of self-interest as frailty of motive thus gives way to opportunism.<sup>5</sup>

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<sup>4</sup> Bounded rationality implies neither non-rationality nor irrationality. Rather, bounded rationality is behavior that is "intendedly rational but only limitedly so" (SIMON, 1957b, xxiv). So construed, bounded rationality takes exception with the assumption of hyper-rationality but does not preclude a predominantly rational approach to the study of complex economic organization.

<sup>5</sup> Opportunism introduces strategic issues that had been ignored by neoclassical economists from 1870 to 1970 (MAKOWSKI and OSTROY, 2001, pp. 482-483, 490-491).

TCE furthermore holds that cognition and self-interest need to be examined together rather than separately – in that interesting issues of comparative economic organization vanish except as both bounds on rationality and opportunism are operative (Williamson, 1985, pp. 30-32, 64-67).

### 3.1.2. *Contract Laws (plural)*

The fiction that contracts are well defined and costlessly enforced by well-informed courts is an analytical convenience for both law and economics. This fiction of legal centralism was nevertheless disputed by Karl Llewellyn in 1931, who held that a legal rules conception of contract was too narrow and introduced the idea of “contract as framework.” As Llewellyn put it, the “major importance of legal contract is to provide...a framework which never accurately reflects real working relations, but which provides a rough indication around which such relations vary, an occasional guide in cases of doubt, and a norm of ultimate appeal when the relations cease in fact to work” (Llewellyn, 1931, pp. 736-737).

The object of contract, so construed, was not to be legalistic but to get the job done.

To be sure, recourse to the courts for purposes of ultimate appeal is important in that it serves to delimit threat positions. But the key idea is this: a legalistic view of contract that applies to simple transactions needs to make way for a more flexible and managerial conception of contract as contractual complexities build up. As against the convenient notion of one all-purpose law of contract (singular), the need for contract laws (plural) is introduced. Such contract law differences play an important role in distinguishing among alternative modes of governance (Williamson, 1991).

Marc Galanter’s contrast between “legal centralism” and “private ordering” is pertinent. Thus whereas the former maintains that “disputes require ‘access’ to a forum external to the original social setting of the dispute [and that] remedies will be provided as prescribed in some body of authoritative learning and dispensed by experts who operate under the auspices of the state” (Galanter, 1981, p. 1), the facts disclose otherwise. Most disputes, including many that under current rules could be brought to a court, are resolved by avoidance, self-help, and the like (Galanter, 1981, p. 2).

The unreality of the assumptions of legal centralism can be defended by reference to the fruitfulness of the pure exchange model. That is not dis-

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Moral hazard, adverse selection, and the defection hazards to which incomplete long-term contracts are subject would all vanish but for opportunism (in that contract as mere promise, unsupported by credible commitments, would then suffice).

puted here. My concern is that the law and economics of private ordering are pushed into the background in the process. That is unfortunate, since in “many instances the participants can devise more satisfactory solutions to their disputes than can professionals constrained to apply general rules on the basis of limited knowledge of the dispute” (Galanter, 1981, p. 4). The analytical convenience of black letter law and its costless enforcement thus give way to a more purposive view of contract, with emphasis on getting the job done, as complexities set in (Llewellyn, 1931; Macaulay, 1963; Summers, 1969; Macneil, 1974).

### 3.2. *Methodological Imperatives*

Robert Solow describes economics “as it is done” in terms of three imperatives: keep it simple; get it right; make it plausible (Solow, 2001, p. 111). TCE subscribes to all three, to which I would add a fourth: derive refutable implications and submit these to empirical testing.

The first and last of these are addressed here. Logic and plausibility are taken up in section 2.3.

Solow’s explanation for the simplicity imperative is that “the very complexity of real life ... is what makes simple models so necessary” (Solow, 2001, p. 111). This is especially pertinent to the social sciences which “deal with phenomena of the greatest complexity” (Simon, 1957a, p. 89). “The social sciences are hyper-complex. They are inherently far more difficult than physics and chemistry” (Wilson, 1998, p. 183).

Stripping away inessentials is accomplished by emphasizing first order effects, after which qualifications, refinements, and extensions can be introduced. TCE responds to the simplicity precept by taking economizing in transaction costs to be the main case, whereupon complex economic phenomena are examined through the focused lens of contract/governance, with emphasis on the mechanisms of ex post adaptation/maladaptation.

Nicholas Georgescu-Roegen introduces the fourth imperative as follows: “The purpose of science in general is not prediction, but knowledge for its own sake,” yet prediction is “the touchstone of scientific knowledge” (Georgescu-Roegen, 1971, p. 37).

Some scoff at prediction, evidently in the belief that prediction is easy. Also, since everyone knows that “it is easy to lie with statistics,” what useful purpose is served by empirical testing? My experience is different: prediction is a demanding standard, which is why so many would-be theories remain “excogitated speculations” and corroboration is difficult, which explains why few predictions are tested.

Progress, moreover, is realized by “weeding out empirically unsuccessful models and improving and extending those that survive empirical tests” (Solow, 1997, p. 50), in which event the theory and the evidence are often interactive, which is also Alan Newell’s position (Newell, 1990, p. 14):

“Theories cumulate. They are refined and reformulated, corrected and expanded. Thus, we are not living in the world of Popper... (Theories are not) shot down with a falsification bullet... Theories are more like graduate students – once admitted you try hard to avoid flunking them out.... Theories are things to be nurtured and changed and built up.”

The idea that theories are progressively developed suggests the possibility of a natural progression – from informal, to pre-formal, semi-formal, and, finally, to fully formal modes of analysis. The informal stage is where the initial challenge to orthodoxy and early intuitions reside, the logic for which is thereafter developed in words (pre-formal), diagrams (semi-formal), and mathematics (fully formal) – ideally with value added at each step.

### 3.3. Implementation

TCE implements the foregoing by naming and explicating the relevant attributes for describing transactions and governance structures and by postulating that transaction cost economizing consequences accrue to the manner in which these two are aligned. Specifically:

1. If some transactions are simple and others are complex, then the attributes of transactions that are responsible for these differences must be named and their ramifications set out. TCE responds by naming asset specificity (which can take a variety of forms), uncertainty, and frequency as three of the critical dimensions for describing transactions.
2. If the comparative efficacy of different modes of governance (market, hybrid, hierarchy, public bureau, etc.) differ, then the critical attributes with respect to which governance structures differ need to be named and the internally consistent syndromes of attributes that define viable modes need to be worked out.
3. A predictive theory of economic organization resides in the discriminating alignment hypothesis: transactions, which differ in their attributes, are aligned with governance structures, which differ in their costs and competencies, so as to effect a (mainly) transaction cost economizing result.

TCE departs from the orthodox resource allocation paradigm in all three of these respects. It also differs from orthodoxy in the aforementioned importance that TCE ascribes to *ongoing contractual relations*. What has been

referred to as the Fundamental Transformation (Williamson, 1985, pp. 61-63) is pertinent in this respect.

It is elementary that economics needs to be alerted to and understand the ramification of all significant intertemporal regularities whatsoever. In the context of contract, transactions that are supported by redeployable investments in generic assets are ones for which a large numbers supply condition at the outset can be presumed to apply thereafter.<sup>6</sup> Rival bidders cannot, however, be presumed to operate on a parity if substantial investments in transaction specific assets are made. That is because the buyer and initial winning bidder now have an economic interest in preserving continuity, which is to say that a *bilateral dependency* condition evolves. Transactions that are transformed from a large numbers-bidding condition at the outset into what, in effect, is a small numbers supply relation during contract execution and at the contract renewal interval will pose maladaptation hazards when confronted with consequential disturbances for which ex ante provision has not been made or has been incorrectly made. Although it is in their combined interests to restore a position on the contract curve, one or both parties are strategically situated to bargain when the stakes are great. Defection from the spirit of cooperation thus must be factored into the calculus for such transactions.

Out of ex ante awareness that transactions that are supported by investments in specific assets pose ex post maladaptation hazards, parties to such transactions have the incentive to craft contractual safeguards that deter opportunism. Prospective hazards thus invite governance responses, to include the creation of credible commitments (penalties to deter breach) and other contractual supports (information disclosure; verification; specialized dispute settlement mechanisms) that encourage and assist the parties to work through contractual strains brought on by disturbances, thereby to avoid contractual breakdown. Llewellyn's concept of "contract as framework" and, in the limit, the use of unified ownership of both stages of production (hierarchy), arise in support of such transactions. The governance of contractual relations takes shape.

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<sup>6</sup> Although the initial winning bidder may continue to supply for a long time, that is because, in effect, it is continuously meeting competitive bids from qualified rivals.

#### 4. *The Governance of Contractual Relations*

##### 4.1. *General*

The New Institutional Economics operates at three levels of analysis: the societal level (where the informal institutions – customs, traditions, norms, religion – are located); the institutional environmental (the formal rules of the game – especially property rights and contract laws, but to include the polity more generally); and the governance level, where the alignment of transactions with governance structures is determinative of the play of the game.<sup>7</sup> Governance focuses on ongoing contractual relations and describes alternative modes of governance in discrete structural terms.

##### 4.2. *Alternative Modes of Governance*

The basic TCE setup distinguishes among three modes of governance: classical markets, hybrid modes of contracting, and hierarchy. The three attributes for describing governance structures are incentive intensity, administrative controls, and contract law regime. Simplification is accomplished by allowing each attribute to take on one of three values: much (++), some (+), or little (0). There being three attributes that can take on three values, 27 different combinations can be described. What are the defining attributes of markets, hybrids, and hierarchies?

The intuition that hybrids are somehow located between markets and hierarchies is widely shared. On the provisional assumption that this is correct, it will be instructive to begin with an examination of how markets and hierarchies differ in incentive, control, and contract law respects.

With reference to incentives, the argument is that markets work out of high-powered incentives, in that each party is autonomous and appropriates its net receipts. Interfirm controls in market exchange are mainly limited to inspections of quantity and quality at the point of delivery. Otherwise each firm independently manages its accounting and auditing; and adaptations to disturbances are likewise of an autonomous kind. Disputes, moreover, are settled in a legalistic way, with emphasis on money damages, since neither side has a strong economic interest in preserving the continuity of the relationship.

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<sup>7</sup> Mainly, higher levels constrain the lower levels, although, in the long run, feedback needs to be taken into account. Changes of a societal kind occur over the interval 102 to 103 years; at the level of the institutional environment on the order of 10 to 102 years; and at the governance level on the order of 1 to 10 years.

Incentives in hierarchy, by contrast, are comparatively low-powered – which is both an unavoidable consequence of unified ownership and, more to the point, an intentional feature of hierarchy. If, following Barnard, coordinated adaptation in the *raison d'être* of internal organization, and if the owner of an enterprise reserves the authority to decide when and how to intervene if dislocations occur, then any “promise” of autonomy to a subordinate division is a delusion. The issues are somewhat involved and are worked out elsewhere in the context of the impossibility of selective intervention (Williamson, 1985, chap. 6). Suffice it to observe here that the move from market to unified ownership (hierarchy), thereby to promote coordinated adaptation, is always attended by a reduction in incentive intensity.

Note, however, that the use of reduced incentive intensity to promote coordinated adaptation comes at a cost. As a check against the malingering that attends weak incentive intensity, and so as to better assure that both routine and cooperative adaptations are accomplished “seamlessly”, a variety of procedural controls (rules and regulations) are put in place. Such controls have both immediate costs and future bureaucratic costs consequences.<sup>8</sup> In consideration of these costs, transactions for which coordinated adaptations are unneeded or promise only small gains will remain in the market rather than be moved into hierarchy.

A further feature of hierarchy that operates in the service of (uncontested) coordinated adaptations is that the firm becomes its own court of ultimate appeal. If, therefore, two divisions within a firm have differences as to how an adaptation is to be accomplished, unresolved differences will be appealed not to the courts but to a supervisor instead. Because the courts understand that the logic of hierarchy (as a governance structure that excels, comparatively, in implementing coordinated adaptation) would be undermined were they to agree to hear internal disputes of an instrumental kind, they refuse to hear such disputes. The courts confer legitimacy on hierarchy by making “forbearance law” the implicit contract law of internal organization (Williamson, 1991).

The TCE comparison of markets and hierarchies in governance respects thus comes down to the following:

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<sup>8</sup> For a discussion of the intertemporal burdens of bureaucracy, see WILLIAMSON (1985), chap. 6. More generally, the sociology literature that explicates how and why organization has a “life of its own” is pertinent (SELZNICK, 1949, p. 10).

Table 1: Governance

Instrument	Market	Hierarchy
Incentive	high powered	low powered
Controls	limited	extensive
Contract Law	legalistic	forbearance

So much for the polar cases. What about hybrids? The intuition here is that hybrids are used to manage transactions where the degree of asset specificity and the nature of the disturbances to which they are subject are of “intermediate degree.” The putative attraction of hybrids is that (1) as compared with markets they are better able to infuse order, thereby to mitigate conflict and realize mutual gains for transactions where continuity matters yet (2) they avoid the heavy bureaucratic cost burdens of hierarchy. But how is this accomplished?

The viability of hybrid contracting rests on the concept of “credible commitment.” Upon recognizing that transactions that are supported by investments in specific assets pose a hazard of bilateral dependency, parties to such transactions have incentives to craft the aforementioned *interfirm contractual safeguards* (penalties against premature breach; information disclosure and verification; dispute settlement mechanisms) that promote contractual continuity. The long-term contract negotiated between Nevada Power Company and the Northwest Trading Company for the supply of coal is illustrative. The contract reads in part as follows:

In the event an inequitable condition occurs which adversely affects one party, it shall then be the joint and equal responsibility of both parties to act promptly and in good faith to determine the action required to cure or adjust for the inequity and effectively to implement such action. Upon written claim of inequity served by one party upon the other, the parties shall act jointly to reach an agreement concerning the claimed inequity within sixty (60) days of the date of such written claim. An adjusted base coal price that differs from market price by more than ten percent (10 percent) shall constitute a hardship. The party claiming inequity shall include in its claim such information and data as may be reasonably necessary to substantiate the claim and shall freely and without delay furnish such other information and data as the other party reasonably may deem relevant and necessary. If the parties cannot reach agreement within sixty (60) days, the matter shall be submitted to arbitration.

By contrast with a classical market contract, the parties to this 32 year coal contract are expressly concerned with consequential disturbances. Specifically, this contract (1) provides a tolerance zone (of  $\pm 10$  percent) within which misalignments will be absorbed, yet (2) contemplates that some dis-

turbances will push the parties outside of this tolerance range, in which event proposed adaptations will be accompanied by (3) added information disclosure and substantiation and (4) arbitration in the event voluntary agreement fails.

Plainly, although the parties remain autonomous, these mechanisms serve to reduce incentive intensity below the level of simple market exchange, yet not to the low powered degree of hierarchy. Also, additional control mechanisms (information disclosure and verification) are provided, but only in limited degree as compared with hierarchy. Finally, broadly in the spirit of Llewellyn's concept of contract as framework, new dispute settlement mechanisms are introduced that have the purpose and effect of promoting continuity, yet not to the degree of unified ownership of the two stages.

By way of summary, the syndromes of attributes that define markets, hybrids, and hierarchies are as shown in table 2 (where ++ denotes much, + some, and 0 nil). The hybrid mode is located between markets and hierarchies on all three attributes.

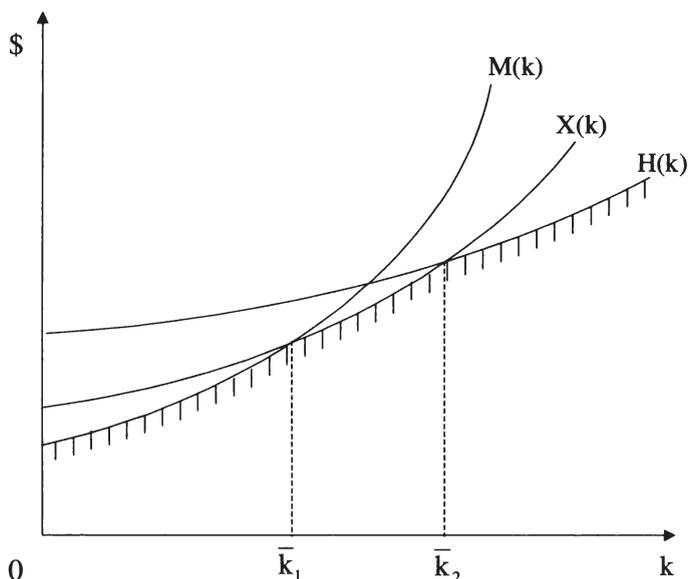
*Table 2: Attributes of Three Viable Modes of Governance*

Governance Structure			
Attributes	Market	Hybrid	Hierarchy
Incentive Intensity	++	+	0
Administrative Controls	0	+	++
Contract Law Regime	++	+	0

A heuristic cost interpretation of the foregoing is set out in figure 1, where  $M = M(k)$ ,  $X = X(k)$ , and  $H = H(k)$  are the reduced form cost expressions for markets, hybrids, and hierarchies, respectively. The argument is that the slopes and intercepts of these three expressions are as follows: slopes  $M' > X' > H'$ ; intercepts  $M(0) < X(0) < H(0)$ . The intercepts reflect the added burdens of administrative setup costs and the burdens of bureaucracy as more complex modes of governance are deployed. The slopes reflect the comparative need and efficacy of implementing coordinated adaptations as bilateral dependency (asset specificity) builds up. Efficient supply entails operating on the envelope. If, therefore,  $k^*$  is the optimal value of  $k$ , the rules for efficient procurement are: use markets for  $k^* < \bar{k}_1$ ; use hybrids

for  $\bar{k}_1 < k^* < \bar{k}_2$ ; use hierarchies for  $k^* > \bar{k}_2$ . A stochastic variant of the model can be found elsewhere (Williamson, 1991). Suffice it to observe here that the above governance rules are preserved for plausible values of the parameters.<sup>9</sup>

Figure 1: Transactions Costs and Asset Specificity



### 5. Hybrids and Networks

The foregoing examination of economic organization applies the lens of contract to the outsourcing decision. The focus is on the attributes of transactions in relation to the attributes of alternative modes of governance, to which the discriminating alignment hypothesis applies.

Vertical integration serves as the paradigm problem, to which a large number of other contractual phenomena turn out to be variations on the same underlying theme (Williamson/Masten, 1995; Ménard, 2005). Recall,

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<sup>9</sup> This oversimplifies, in that optimal  $k^*$  and organization form are decided simultaneously rather than sequentially. The ramifications of the reduced form model (RIORDAN and WILLIAMSON, 1985) in which asset specificity and organization form are decided simultaneously nevertheless tracks that of the heuristic argument in the text.

moreover, that the governance of contractual relations (the play of the game) takes place within societal level and institutional environment level constraints. In addition, therefore, to *intentional safeguards of a bilateral contracting kind*, the governance of contractual relations is also influenced by (1) societal level influences, of which – “societal-trust” – is especially noteworthy (Banfield, 1958; Dore, 1983), (2) institutional environment level influences, of which property law, contract law, regulation and the integrity of the enforcement process are all important, (3) spontaneous governance supports, of which the efficacy of competition, reputation effect mechanisms, and informal organization are especially important, and (4) multi-party governance supports of an intentional kind, of which the creation of “associations” is an example.

As developed herein, I regard the last two as especially important to an examination of networks. Accordingly, I define networks as *hybrid modes of governance which rely extensively on spontaneous mechanisms and/or the use of associations for support*. Networks may therefore be thought of as moving beyond bilateral contracting supports to include added supports from commonly situated or affiliated parties. So described, both earlier TCE work of mine and that of many others have implicitly, if not explicitly, been very much concerned with networks.

### 5.1. TCE on Networks

I begin with a brief sketch of the variety of ways in which networks, as described above, have made their way into my TCE examination of governance.

#### 5.1.1. Spontaneous Governance Supports

##### *Competition*

Albeit somewhat of a stretch, the “marvel of the market” to which Hayek (1945) refers can be regarded as a multiparty network in which autonomous parties respond spontaneously to changes in the market as signaled by changes in relative prices. Competition provides an overarching discipline.

##### *Reputation effects*

Contract renewals that are made conditional on prior experience – both own experience and that of other similarly situated firms – are disciplined by reputation effects. Although the efficacy of reputation effects is highly

variable (Kreps, 1990; Williamson, 1991b), network governance effects nevertheless accrue where multilateral reputation effects are operative.

### *Informal organization*

Informal organization is especially important to the viability of hierarchy. As Barnard observed, formal and informal organization always and everywhere co-exist (1938, p. 20), where informal organization contributes to the viability of hierarchy in three respects: communication, cohesiveness, and the protection of personal integrity (Barnard, 1938, p. 122). An appreciation for the spontaneous mechanisms of informal organization is important to the informed use of both hybrid and hierarchy (Palay, 1984; Williamson, 1990).

#### *5.1.2. Associational Supports*

##### *Supplier associations*

Japanese automobile manufacturers have organized their suppliers into associations, the TCE interpretation of which is that these associations enhance buyer and seller confidence in outsourcing (Williamson, 1985, pp. 120-122). This farsighted view of contracting is to be contrasted with the more adversarial outsourcing practices of U.S. automobile manufacturers – which firms, however, have learned the hard way that, if and as a myopic focus on the adversarial gains of myopic contracting is more than offset by the added risk and attendant loss of cooperation, the net effect on outsourcing is negative.

##### *Franchising*

Franchised dealers provide manufacturers with a way of participating in the distribution of their goods and services without having to integrate forward into distribution. If and as, however, individual franchisees fail to take negative spillover effects among themselves into account, the integrity of franchising will be compromised. So as to mitigate suboptimization among franchisees (in promotional and quality assurance respects), franchisors will impose system-protective actions – of which the use of hostages to support exchange is an example (Klein/Leffler, 1981; Williamson, 1985, pp. 181-182).

##### *Producer cooperatives*

Producer cooperatives, especially in agriculture, are a way by which to preserve high-powered incentives among the membership yet enjoy the

benefits of collective action. The benefits of collective action can nevertheless be compromised by self-interested action by the membership – sometimes by reason of objective differences (in the size or quality of product) among the members, sometimes because of lack of commitment to collective action (which leads to defection). The circumstances under which producer cooperatives work well and poorly (which will vary with the good or service in question) and the efficacy of various safeguards need to be worked out (Williamson, 2004).

### *Labor organization*

The neoclassical view of unions is that these have monopoly purpose and effect, and some do. But the collective organization of labor can also help to perfect the contractual relation between workers and employers in circumstances where workers develop firm-specific skills that cannot be deployed to other uses and users without loss of productive value. Mutual efficiency gains will be realized if labor is provided with added safeguards as human asset specificity builds up (Williamson, 1985, chap. 12). Unions can thus serve efficiency purposes as well.

### *Restrictive membership networks*

There is a large and growing literature on the organization of the diamond market, both as between de Beers and diamond merchants (Kenney and Klein, 1983) and within the diamond merchant community (as in New York, where membership has been limited chiefly to Ultra-Orthodox Jews). The special rules that apply to membership and trading to these networks often have the appearance of being anticompetitive, yet mainly have the purpose and effect of reducing the cost of trading and improving the integrity of exchange.

### *The firm as a network?*

TCE views the firm as the inclusive set of bilateral contracting relations for which the decision is reached to take the transaction out of the market and manage it under unified ownership. Simplification is realized by treating each procurement decision – whether to outsource (to market or hybrid) or to integrate – as if each transaction were independent. There may be circumstances, however, for which second order effects are properly taken into account. Interactions among transactions of a multilateral kind

can thus arise.<sup>10</sup> Some will regard such externalities as a network, but that is not what my definition contemplates.

### *Intentional supports for spontaneous mechanisms*

Spontaneous mechanisms (such as reputation effects and informal organization) can and often are perfected by taking intentional measures to extend their reach and improve their integrity, of which the merchant law system (Milgrom/North/Weingast, 1990) is an example. TCE is useful for helping to ascertain where the hazards of noncompliance reside and what measures will be cost effective.

Others who have recently discussed network mechanisms in relation to hybrids include Roland Spekle (2001) and Claude Ménard (2004). Spekle discusses Japanese subcontracting as a hybrid mode into which (network) associational features are introduced (Spekle, 2001, pp. 46-53). He also interprets venture capital financing as a hybrid (Spekle, 2001, pp. 53-64). More generally, Spekle plainly regards the TCE approach to the study of economic organization as an instructive way by which to interpret a wide variety of non-standard contracting and managerial practices, many of which qualify as hybrids in the TCE scheme of things.

Ménard arrays hybrid forms of organization along the spectrum from  $k_1$  to  $k_2$  in figure 1, where he locates networks in the middle of this range (Ménard, 2004, p. 25). Ménard contends that observed diversity within the hybrid mode tracks the logic of transaction costs: “forms of network adopted tend to be aligned with the properties of the transactions they are dealing with” (Ménard, 2004, p. 25).

### *5.2. Sociologists on Networks*

There is an expansive literature in sociology on networks, which Walter Powell (1994, pp. 368-370) divides into two parts: networks as an analytical tool (much of which entails the structural analysis of networks (White, 1992; Burt, 1992)) and networks as forms of governance. Consistent with the spirit of this paper, I focus on the latter.

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<sup>10</sup> Although TCE examines technologically separable transactions “as if” they were fully independent, both history and strategic purpose matter (NICKERSON, 1997; WILLIAMSON, 1999, pp. 1102-1104).