The Contractual Governance of Transactions within Firms

BY CATHERINE MAGELSSEN*, BEVERLY RICH**, and KYLE MAYER***

ABSTRACT

A central theoretical premise is that firms internalize transactions that are not suited for formal contracting. Yet, there is growing evidence that firms rely on formal contracts to govern some of their transactions *within the firm*. This paper discusses why firms use formal contracts between units and develops propositions for when formal contracts arise. Internalization does not eliminate transactional problems, and informal agreements for transactions between units often suffer from problems understanding what the other unit will do and whether it will do what it promises. We argue that many of the features that make formal contracts valuable tools for market exchange are beneficial within firms, even if court enforcement of the contract is not possible. We suggest that formal contracts between units serve as communication and commitment devices that address coordination and incentive problems within the firm by providing clarity and credibility on the rights allocated to the units in the transaction.

***Working Paper – Please do not cite without authors' permission.**

* London Business School (cmagelssen@london.edu).
** University of Southern California (brich@marshall.usc.edu)
** University of Southern California (kmayer@marshall.usc.edu)

"*Large firms are substantial sub-economies of their own with thousands of participants. This alone warrants more attention to non-market modes of transaction*."

(Holmstrom and Tirole 1989, p. 61)

INTRODUCTION

The governance of transactions within firms has substantial implications for firm performance (Blader et al. 2015, Gibbons and Henderson 2012, Helper and Henderson 2014). Existing research from an organizational economics perspective has focused on the use of authority and informal agreements (also referred to as relational contracts) to govern internalized transactions (Baker et al. 1999, 2002, Gil and Zanarone 2017, Grossman and Hart 1987, Williamson 1985) because of the prevailing view that *within* firms formal contracts between units are non-enforceable in courts of law and therefore are non-credible and should not be utilized (Baker et al. 1999, Williamson 1991). Yet, contrary to the assumptions or predictions of incomplete contracting theories, there is growing evidence that firms rely on formal contracts to govern transactions within the firm (Magelssen 2020, Markovits and Rauterberg 2018, Naylor and Lewis 1997). The intra-firm formal contracts are written agreements signed by managers of the transacting units that define rights to perform activities, and rights to assets, income, and enforcement for the transaction and are so detailed that they often mirror contracts between firms (see e.g., Appendix I and Lockheed example on page 10). Considering that over sixty percent of world trade is generated by transactions within firms (Scott 2009) and 69 of the top 100 economies in the world are firms (World Bank 2016), understanding the governance of internal transactions is theoretically and empirically important.

Despite top managers knowing the goals they want to achieve, including what internal transactions need to occur, they are often faced with an administrative problem whereby "they cannot get the organization to get it done" (Gibbons and Henderson, 2012). Such issues stem from coordination and motivation problems within firms (Roberts 2007, Simon 1951). Authority has been studied as a primary means of coordinating internal activities and resolving internal disputes. However, the use of authority is limited by bounded rationality, which makes it infeasible for top management to make all decisions

within the firm (Aghion and Tirole 1997, Hart 1995). Moreover, the emphasis on authority often understates the costs of aligning interests and resolving conflict within the firm (Eccles and White 1988, Jacobides and Winter 2005, Nickerson and Zenger 2008, Walker and Poppo 1991). Informal agreements can coordinate activities and align interests within the firm (Baker et al. 2002). Still, these agreements often are challenging to build and refine due to two critical problems: *clarity*—whether each party understands the promises, and *credibility*—whether each party will keep their promises (Gibbons and Henderson 2012). The prevalence of internal transactions means that problems with them can influence firm outcomes (Helper and Henderson 2014).

Despite the growing evidence of their widespread use, existing research provides little insight into why and when firms will use formal contracts to govern their internal transactions. We seek to address this theoretical gap in this paper. Scholars in law have written about internal contracts (Iacobucci and Triantis 2007, Rauterberg 2016, Squire 2011) and provide examples from the aerospace, food, construction, electronics, and energy industries of firms using formal contracts between business units (Rauterberg 2016). In a dataset of 102 multinational firms ranging in size from one to several thousand subsidiaries, *all* multinational firms used formal contracts for at least some internal transactions (Magelssen 2021). Governments and regulatory bodies recognize formal contracts between organizational units (e.g. IRS Treas. Reg. sec. 1.482-1(d)(3)(ii)(1) and (2); OECD Transfer Pricing Guidelines (TPG) Chapter 1 D.1.2.3), and in some circumstances, they can be enforced in court.[1]

We theorize that formal contracts can act as communication and commitment devices within firms to alleviate issues of clarity and credibility, and therefore can be valuable even if they are not legally enforceable. Our study contributes to property rights theory (Grossman and Hart 1986, Hart and Moore 1990), which views the firm as a common pool of assets that units may access and use, by

[1] In response to a public consultation by the Organization for Economic Development (OECD), whole industry groups, business groups, law firms, consulting firms, and firms from around the world submitted statements asserting that formal contracts reflect the internal transactional relationships and should form the basis of delineating the internal transaction, with any significant deviations of the actual transactions from the formal contract terms subject to penalties and renegotiation (OECD 2015).

developing a theoretical framework for when firms will be more or less likely to internally allocate property rights to units using a formal contract. By formally specifying the property rights of units within the firm, including the residual control rights for decision-making in the event of non-contractible contingencies, the firm clarifies ex-ante the roles, responsibilities, and incentives of the units in the exchange. Using formal contracts lowers the probability that the CEO or other high-ranking manager will intervene in the transaction and reduces the extent to which units will resort to help from higher-level managers (i.e., fiat) in the firm. As such, formal contracts are a commitment mechanism that enhances the clarity and credibility of unit rights within the firm.

Understanding the need for intra-firm formal contracts revolves around identifying when clarity and credibility issues may cause problems in transactions. Internal formal contracts are rare when transactions are clear, and neither party has any incentive to defect. We theorize that these contracts are more likely to be used when the transacting units do not know each other's payoffs from cooperating or defecting, when there is a perceived incentive for one or both parties to defect, or when it is not clear what constitutes cooperation. It is essential to identify conditions under which problems of clarity and credibility will be more prevalent. We argue that firms are more likely to use internal formal contracts when the transaction is more complex or when there are significant differences (e.g., functional, geographic, and/or cultural) between transacting units. In addition, externalities, such as liability concerns, are more likely to involve formal contracts because they influence the possible payoffs of the units and thus reduce the credibility that units will adhere to an informal agreement. Finally, when top management intervention is costly, such as when the units have important local knowledge for value creation, the clarity and credibility of formal contracts can reduce the probability that top management will intervene.

We contribute to a growing body of research that uses property rights theory to understand the delegation of decision rights within firms (e.g. Aghion et al. 2014, Hart and Moore 1999). Extant work focuses on decision rights rather than a variety of property rights and is unclear about the mechanisms through which the decision rights are allocated. How rights are established, however, is crucial for

managerial buy-in and success (Hart 2008). We contribute by theorizing the role of formal contracts in delegating internal property rights. For example, a property right granted by informal deference is likely to be exercised differently than one granted by more formal means. Still, extant research discusses where decision rights should reside with little regard for how they are allocated.

Our study also adds to scholarly work on markets within the firm. Existing work in this area focuses on the determination of transfer pricing (Holmström and Tirole 1991, Shelanski 2004), including the kinds of prices used (Poppo 1995) and the incentive effects of bringing the market inside the firm (Baiman et al. 2007, Stein 1997).[2] However, pricing is only one aspect of governance and does not eliminate the need for other mechanisms to facilitate coordination.[3] Our study also is relevant to research on internal organization, much of which has utilized agency theory and organizational design.[4] While this literature has made significant contributions to our understanding of coordinating processes within the firm (e.g., Dobrajska et al. 2015, Eisenhardt 1989, Kretschmer and Puranam 2008), less attention has been devoted to understanding transactional governance inside the firm.[5] This study contributes by addressing when firms will choose to use formal contracts to govern their internal transactions.

[2] The intra-firm written contracts are conceptually distinct from the internal capital market in that they are a mechanism that governs the exchange, but they influence the internal capital market through influencing rights to income. In other words, they provide rich content on the coordination of activities and mechanisms for adaptation and dispute resolution when coordination problems arise.

[3] Our research is related to research on the firm as a nexus of contracts (Alchian and Demsetz 1975, Jensen and Meckling 1976). Scholars from this perspective focus on formal contracts and suggest that the difference between the governance of external and internal transactions is less distinct than that proposed by Coase (1937) and Williamson (1985, 1991). Specifically, rather than view the market as governed by contracts and the firm by authority, the firm has been conceptualized as a nexus of contracts at two levels - a nexus of formal contracts with external organizations, and a nexus of formal contracts with internal and external individuals (Alchian and Demsetz 1975), but has ignored the firm as a nexus of contracts between internal organizational units that transact.

[4] Organizational design scholars have studied the use of organizational structure; processes, rules, and routines; and informal structure as integration mechanisms across units. Organizational structure establishes authority over organizational activities based on structural positions of the units (Weber 2009). However, organizational structure does not specify how units will interact in an exchange or in the co-development of a good, service, or technology. Transactionally, the organizational structure does not always convey a power structure. Transacting units often are not in the same vertical structure on an organizational chart, and therefore it is not always clear who holds the authority in an internal transaction.

[5] Studies from various theoretical perspectives have suggested that, similar to external hybrid arrangements that occur between firms, internal hybrids exist and are prevalent; these studies link internal hybrids to structural features such as the M-form, profit centers, and teams (Hennart 1993, Makadok and Coff 2009, Zenger 2002). Nevertheless, this work has not considered the use of formal contracts between transacting units as an element of internal hybrids.

We structure the paper as follows. We first provide a theoretical background on property rights and transactions within the firm before discussing internal transaction governance options. We then discuss the limitations of informal agreements, followed by our theory for the role of intra-firm formal contracts as communication and commitment devices that solidify unit property rights. Next, we elaborate on the costliness of using fiat to resolve disputes and why formal contracts are a beneficial governance mechanism. We then provide our propositions. Implications, limitations, and concluding remarks follow.

THEORETICAL BACKGROUND

Property Rights and Transactions within Firms

Property rights scholars often conceptualize the firm as a common pool of assets and resources (simply referred to herein as "assets") that units within the firm may use (Segal and Whinston 2013). The common pool aspect gives rise to ambiguity over rights allocations within firms. Property rights define the actions that a party can take regarding some resource or good that others must observe (Ostrom 2003). They form expectations that parties can reasonably hold in relation to others, including how a party can be benefited or harmed, and therefore who must pay whom to modify actions (Demsetz 1967:347). Barzel (1997) discusses that poorly defined rights occur when the delineation of rights to the parties are not secure.[6] In such cases, both parties can gain by affecting the income stream (Barzel 1997).

Within firms, ambiguity over rights allocations can arise, particularly when units share resources or transact. For instance, in a consumer goods company, a manufacturing unit sells products to a distribution unit. The product contains technology that drives sales and profits due to its quality and features. Although both units have access to the technology, many questions arise as to which unit has the right to make the decisions over the product technology when the parties disagree, and for which aspects of the technology each unit holds the decision rights, the rights of the units to the profits generated from the technology, and which unit is responsible when the transaction or the product face unexpected outcomes.

Transactions that give rise to internal property rights concerns are prevalent within firms. Many

[6] It is impossible to perfectly define a property right. Property rights differ in terms of how well they are delineated and securitized with poorly defined rights at one end of the continuum and well defined rights at the opposite end.

firms are multi-unit structures (Caves 1980, Chandler 1990) with sub-economies of transactions (Eccles and White 1988, Holmstrom and Tirole 1989, Tsai 2002). Williamson (1985:1) defines a transaction as a transfer of a good or service across a technologically separable interface. Baldwin (2008) builds on Williamson to define transactions as mutually agreed upon transfers with compensation. An internal transaction, therefore, is a mutually agreed upon exchange of goods, services, or intangibles, with compensation between units of a firm. Although the typical conceptualization of an internal transaction has been between units in stages of a production process (Baker et al. 2002, Coase 1937), they can also occur between similar functional units sharing resources or between divisions (Baldwin 2008).[7]

Scholars have long acknowledged the problems with poorly defined, ambiguous, and/or common-pool resources: parties have reduced incentive to act on opportunities, preserve or build the resource, or mitigate harmful effects on others and opportunistically appropriate value (Alchian 1989, Libecap 1993). These problems are costly due to inefficiencies from misallocated risk, inefficient resource allocation, inefficiently low levels of effort, expenditures on monitoring, and costs from manipulating performance measures (Roberts 2007).

Units within firms care about internal rights allocations as they undertake responsibilities and are tracked by their revenue and costs. For top managers, understanding where costs arise and income accrues enhances the ability to allocate resources to their best use. For unit managers, their unit's responsibilities, income, and costs affect managerial power, resources, status, performance evaluations, and career paths. Unit resources, rewards, and status often depend on their performance compared to other units (Tsai 2002). However, unit performance is often contingent on transactions with other units. Eccles and White (1988) document cases on the difficulty of managing lateral relationships within the firm leading units to prefer using third-party suppliers rather than internal suppliers. Internal disputes are not just about pricing. Problems also revolve around whether the internal party met deadlines and timeframes, delivered quality

[7] A rich literature focuses on the modularization of tasks and the emergence of units and transactions within firms (Baldwin 2008, Bethel and Liebeskind 1998). We take as given the units of the firm and the transactions between units and focus our study on when firms will choose to use a formal contract to govern a transaction between units.

goods, or performed the promised task (Eccles and White 1988, Rauterberg 2016).

Commanding authority, where top managers direct unit activities and resolve disputes (also referred to as fiat or Type I authority), is a central mechanism for managing internal transactions (Grossman and Hart 1986b, Williamson 1985). However, information asymmetry and bounded rationality limit the ability of top managers to coordinate and direct all activities, plus such interventions can have a deleterious effect on the motivation and the perceived capability of middle managers who are being overruled (Aghion and Tirole 1997, Farrell 1987). The larger and more diverse the organization and the more complex the transactions, the harder it is for top managers to intervene and make effective decisions throughout the organization because they lack an understanding of the contextual nuances of every transaction they may be asked to direct. Thus, rights are often delegated within the firm (e.g. Aghion et al. 2014, Hart and Moore 1999). We now examine various intra-firm agreements used to allocate rights and govern internal transactions.

Formalization of Intra-firm Agreements[8]

Intra-firm agreements (formal and informal) entail mutual consent from the parties about what will be exchanged and the compensation. Thus, intra-firm agreements involve both coordination and incentives. Intra-firm agreements can be viewed as a participatory integration mechanism (Castañer and Ketokivi 2018, Lazzarini et al. 2008), enabling managers to negotiate and design the exchange. They facilitate the revelation of information that might otherwise not be disclosed, thus better aligning expectations (i.e., enhancing clarity) and interests (i.e., enhancing credibility). In the negotiation of an

[8] Firms may use transfer prices, process documents, and/or intra-firm agreements as lateral transactional governance mechanisms. Scholars have largely focused on the use of transfer prices for incentives (Holmström and Tirole 1991, Shelanski 2004) and process documents for coordination of activities. Transfer prices explicitly specify unit rights to compensation for the transaction (Shelanski 2004) and can be used to track unit performance. The type of transfer price used is based on the type of incentive needed to provide the unit in the transaction (Holmström and Tirole 1991). While often set in advance with adjustment mechanisms for contingencies, transfer prices typically do not explicitly specify enforcement mechanisms nor how the divisions will work together. Process documents codify the coordination of activities by describing the workflow, how work will be accomplished, and who will perform what activity (Takeishi 2001). As a coordination device, processes, rules, and routines set forth in the process document provide regularity and coherence to a group and enable actors to predict the behavior of others (March and Simon 1958). Process documents address a limited range of issues that might arise; they do not stipulate compensation, require mutual consent, or address mechanisms for enforcement. If a process breaks down, fiat is typically used.

intra-firm formal contract, the units reveal more details on their concerns, what they require, and the trade-offs that they are willing to make, as well as detail over how they will work together, and how the activities can be monitored (see examples on page 15).

Despite the emphasis of existing research on informal agreements within firms, intra-firm agreements differ in the extent to which they are formalized, that is, the extent to which they are explicit, hard, or concrete (Macneil 1980) (see Figure 1).[9] The more the parties have an implicit understanding of their rights in the exchange—how they will interact with each other, including when different contingencies may arise, the more informal the governance relationship (Ring and Van de Ven 1992).

Insert Figure 1 here

Figure 1 provides an overview of different types of intra-firm agreements with the governance of the exchange gradually increasing in formalization moving from left to right along the dimension.[10] At the far left are informal, unwritten agreements. Informal agreements are unwritten codes of conduct that govern the exchange (Baker et al. 2002: 39). These can be implicit agreements based on shared understandings, precedent, or expected behaviors or oral agreements discussed and negotiated between the units. For example, a unit manager of an electronics firm may call up the manager of the component manufacturing unit and ask for a shipment of 1,000 components. The managers may agree on a price and estimated time of delivery for the components. The units can increase formalization through an informal written agreement, such as an email, that confirms the main terms of the agreement and leaves the details of the transaction implicit. In the preceding example, the manager would send a follow-up email stating

[9] Formalization of intra-firm agreements is conceptually distinct from formal versus real authority within firms. The literature on formal versus real authority conceptualizes formal authority as "the right to decide" and real authority as "the effective control over decisions" (Aghion and Tirole 1997, p. 1). As noted by Aghion and Tirole (1997), formal authority may be a result of informal or formal contracts. Real authority of units is based on where information lies within the organization, and whether the top managers will rubber stamp the decisions proposed by those units with the information, rather than based on agreements between these units. Real authority, therefore, is conceptually distinct from informal agreements within the firm.

[10] There are many variations in the extent to which an intra-firm agreement is formalized. We highlight several categories along the dimension to exemplify differences and acknowledge this list is by no means exhaustive.

that they agreed to 1,000 units at $1.15 per unit. Informal written agreements can be used to reference the main terms later if needed but garner flexibility and ease of not requiring extensive negotiation or explicit specification of the terms, nor an explicit definition of the enforcement mechanism. In contrast, a formalized agreement is a detailed, written documentation of the agreement with signed consent by the parties but does not contain adjudication or enforcement mechanisms.

A formal contract is a written agreement between units that specifies the rights, terms, conditions, compensation, and adjudication and enforcement mechanisms for the exchange (Markovits and Rauterberg 2018). Intra-firm formal contracts often use parties internal to the firm, but third party to the transaction or a balanced joint committee for adjudication of disputes, including relying on a committee, agreed-upon adjudicator, panels of peers, an independent arbitrator appointed by the firm's board, internal court system, business group, or a third business unit that is not involved in the transaction (Rauterberg 2016). For instance, Markovits and Rauterberg (2018) describe how a Lockheed Martin intra-firm contract specifies that disputes will be resolved by a joint committee with members of both divisions, while the natural gas company Gazprom relies on an internal court system (Rauterberg 2016). Other intra-firm formal contracts use external enforcement mechanisms, as in the case of subsidiaries that assign enforcement to third party courts of law. The specification of an alternative dispute resolution mechanism that assigns dispute resolution away from the chain of command is intriguing.

Appendix I details the elements of a formal contract between a manufacturer and a distributor within the same firm. The units are wholly owned subsidiaries, and the formal contract clearly designates that the terms of the agreement will be governed by state law (U.S. state redacted for privacy). Similar to formal contracts between firms, this contract defines terms and conditions of the exchange and rights to assets, perform activities, compensation, termination, monitor, warranties, and enforcement mechanisms.

Though the components tend to be the same, there is variance in the extent to which intra-firm formal contracts reflect inter-firm contracts. This variance in large part is due to whether the unit is a legally distinct (a subsidiary) versus a non-legally distinct unit. We discuss the differences between intra-firm formal contracts that specify internal versus external alternative dispute resolutions in the section

"Legal Distinction Between Units" section. Nonetheless, even formal contracts between non-legally distinct units are frequently negotiated by the unit managers and often are similar to inter-firm contracts.

For instance, Markovits and Rauterberg (2018) provide the example of two Lockheed Martin divisions creating a formal contract for an internal joint venture (JV) to design and manufacture military aircraft. Because the divisions were within the same legal entity, the contract was not court enforceable. The contract specified the divisions' rights to perform specified activities, the investments in the JV, employee transfers, control rights, income rights, and dispute resolution mechanisms. Lockheed viewed the internal JV as very successful. Four years later, one of the divisions that entered into the JV was sold to BAE, at which point the contract was transferred to BAE by replacing the Lockheed division name with the name of the BAE acquiring entity. The internal formal contract had become a legally enforceable contract between two separate firms by simply replacing a name. Four years after the acquisition, the contract was taken to court by BAE, and the court upheld the contract (Markovits and Rauterberg 2018).[11] Despite the internal formal contract's lack of legal enforceability and, therefore, lack of "credibility" (Baker et al. 1999, Williamson 1991), the contract successfully governed the exchange and was subsequently validated when it was kept in force as the transaction became inter-firm. This example demonstrates that intra-firm formal contracts can be very similar to inter-firm contracts, as this contract was upheld in court after the BAE acquisition externalized it.

The process of establishing the intra-firm formal contract varies: units can negotiate, or headquarters can set the contract terms. Regardless of whether top management dictates the initial allocation of rights and lets the units work out the remaining details of the transaction, or whether the units fully negotiate the rights allocations in the formal contract, our predictions of when formal contracts will be beneficial hold. Although the party(ies) that set the terms may affect how rights are allocated, the role of the contract in guiding the exchange and credibly committing to the rights allocated to the units is

[11] While firms might put in place a contract in preparation to spin off a unit, most contracts are in place for many years (if not decades) with amendments to update the contract to changing conditions. In the Lockheed example, the contract was in place for approximately four years before the sale of the division to BAE.

still the same.

The terms of the intra-firm formal contracts are important to the units, and therefore often, the units invest in negotiating for their rights in the agreements. A subsidiary of the natural gas company Gazprom states that, "many multinational firms do not act as a single controlled group and can have degrees of independence which means that negotiations between related parties [subsidiaries] often already have all the attributes of negotiations between unrelated parties" (OECD 2015, p. 361). Managers from Reed Elsevier, a publishing, content, and analytics firm, have publicly stated that the intra-firm formal contracts are valid devices for governing the exchange and that the internal contract terms are often "strongly negotiated…the terms of related party contracts cannot be simply disregarded" (OECD 2015, p. 683).

Insert Table 1 Here

Existing research primarily focuses on the two ends of the governance dimension: 1) the use of informal, unwritten agreements (or simply "informal agreements"), and 2) the use of formal contracts (see Table 1). Because it is infeasible due to space constraints to have a theory for all aspects along the dimension in Figure 1, we follow extant work and focus on informal agreements and formal contracts.

An extensive literature on the transactional relationships *between* firms suggests that formal contracts can complement informal agreements in governing transactions (e.g., Baker et al. 2002, Levin 2003, Macleod and Malcomson 1993, Malcomson 1997). The premise that firms do not use formal contracts *within firms* because they are non-enforceable in courts of law overlooks the role of formal contracts as communication and commitment devices. An expanded view of the role of contracts between firms has highlighted that contracts play a large role in coordination and adaptation (Mayer and Argyres 2004, Ryall and Sampson 2009, Vanneste and Puranam 2010). Legal enforcement of inter-firm contracts is often only used as a means of last resort; few inter-firm contracts are ever taken to court (Macaulay 1963), and many firms enter into contracts that are unenforceable in courts of law (Gil and Zanarone 2017, Ryall and Sampson 2003). If firms willingly enter into external contracts that are unenforceable in courts of law, then the legal enforceability of formal contracts should not preclude firms from using them

internally as the contracts still serve a key purpose in coordinating the transaction.

Within firms, scholars have noted coordination and incentive problems arising from lack of clarity and credibility that inhibit building and reinforcing informal agreements (Gibbons and Henderson 2012). We, therefore, look to the conditions under which informal agreements break down to understand when formal contracts may complement informal agreements in governing transactions within firms.

Challenges in Building, Refining, and Maintaining Informal Agreements

The Grossman-Hart-Moore property rights framework was extended by Baker et al. (2002) to include informal agreements. Informal agreements have an implicit allocation of property rights based on an understanding between units, norms, or customs in rights allocations (Libecap 1993). Despite the "implicitness," conditions such as repeated exchange or a strong organizational culture can make the rights allocations implicitly well specified (see, e.g. Halac 2012, Macleod 2007). Informal agreements must be self-enforcing such that the value of the future relationship is sufficiently large that neither party reneges (Baker et al. 2002: 40, Gil and Marion 2013). Most research on informal agreements has focused on the steady-state and overlooked how informal agreements initially develop (Gibbons and Henderson 2012).

Within firms, two main problems make it difficult to build and refine informal agreements. First, the lack of clarity, or the parties' mutual understanding of the promises made in the agreement, can undermine or even preclude an informal agreement (Gibbons 2020, Gibbons and Henderson 2012, Helper and Henderson 2014). To build an informal agreement, the parties must have a shared understanding of: 1) the tasks for the transaction (i.e., what constitutes cooperation), and 2) the relational knowledge, which entails how each party might respond, the possible behaviours available to defect or cooperate, and the payoffs (rewards and punishments) from all of the actions (Gibbons 2020, Gibbons and Henderson 2012). Relational knowledge is particularly difficult to develop since bounded rationality, including cognitive biases and limitations, inhibits comprehensive understanding of how other units may behave when executing the contract (Foss 2003). Even with aligned goals and interests, parties often interpret and

respond to signals differently (Weber and Mayer 2014). Communication and information sharing are needed for partners' expectations about the exchange to converge (Malmgren 1961).

Second, a lack of credibility of whether the parties will keep their promises can inhibit an informal agreement (Gibbons and Henderson 2012). Informal agreements rely on calculative trust that the units will engage in the transaction as intended (e.g., Klein 1996). When units have misaligned interests, the expected payoffs (rewards and punishments) motivate them to adhere to the agreement. The lack of credibility of informal agreements has been widely studied and is driven by factors such as the inability to punish, fluctuating returns, and payoff schemes (Halac 2012, Macleod 2007, Macleod and Malcomson 1989).

While the lack of credibility or clarity alone may be sufficient to undermine an informal agreement, the presence of both interacts in complex ways creating a significant impediment to building an informal agreement (Gibbons and Henderson 2012, Helper and Henderson 2014, Macleod 2007). Incentives problems exist within firms because it may not be in the interest of individuals or units to act in ways that provide solutions to coordination problems (e.g., Alchian and Demsetz, 1972, Roberts 2007, Eisenhardt 1989). Units tend to look out for their own best interest at the cost of other units and may not exert sufficient effort or may want to maximize their benefits gained (Roberts 2007). For informal agreements, information necessary for clarity may be distorted or withheld since it may not be in the unit's interest to reveal it (Gibbons and Henderson 2012).

Below, we contend that firms use intra-firm formal contracts as communication and commitment devices in allocating property rights within the firm. Thus, formal contracts can be beneficial when problems with clarity and credibility are associated with unit rights in the transaction. Formalization of rights affects the clarity and securitization of incentives, responsibility and coordination, and enforcement of the agreement.

Role of Formal Contracts in Allocating Property Rights

There is an inherent link between property rights and formal contracts. Classical property rights

theory suggests that formal contracts reallocate various property rights among contracting parties, focusing on the challenges arising from measurement and enforcement (e.g., Barzel 1997). Modern property rights theory tends to more narrowly focus on ownership as a means to induce relationship-specific investment, suggesting that property rights help address the limitations of formal contracts (e.g., Merges 2005). The party with residual income and control rights maintains strategic discretion in the event of unforeseen contingencies. Thus, "contractual incompleteness can be overcome by assigning a property right to one or the other of the transactors before the contractual exchange takes place" (Merges 2005: 8). We mainly follow the more classical property rights tradition of looking at the challenges of assigning and enforcing the rights themselves (e.g., Alchian and Demsetz 1972, Demsetz 1967).

Intra-firm formal contracts assign property rights to the units, thereby creating a sub-hierarchy of rights at the transaction level within the firm. Property rights can prevent holdup problems by securing a party's bargaining position and enhancing its enforcement option for authority over the assets and rights to income (Merges 2005). In addition, the allocation of property rights creates the basic incentive system that influences resource allocation (Libecap 1993). Thus, property rights can alleviate underinvestment and inefficient resource allocation (Aghion and Tirole 1997).

Formal contracts solidifying property rights are not costless. In comparison with informal agreements, formal contracts require additional time and effort to formalize the agreement. Designing contract terms to account for adaptation without too much rigidity takes time (Klein 1996). The process of establishing or amending formal contracts slows organizational response. Although firms, such as Mott MacDonald, may have formal procedures for bidding out and writing an intra-firm formal contract, the contract can take time to put in place, and work typically does not start until a contract exists.[12] Finally, as a commitment device, formal contracts can create sticky rights allocations in the case of renegotiation (Malcomson 1997). Despite these costs, formal contracts can also provide internal benefits, including serving as communication and commitment devices for solidifying unit rights.

[12] Information provided in an interview with a manager on October 12, 2019.

Communication device. The formal contracts provide clarity on unit roles and responsibilities by explicitly delineating unit property rights. To illustrate, a firm operating in the semiconductor industry has a sales representative and service support formal contact between a Malaysian subsidiary and a US subsidiary. The formal contract clearly delineates the Malaysian unit's rights to sell and service products in its Territory, defined as Malaysia, and that it does not have such rights outside the territory. The formal contract states: "[Malaysian Subsidiary] further agrees that (a) it shall immediately send to [US Subsidiary] all inquiries relating to the Products received from customers outside the Territory, and (b) [US Subsidiary] shall have no obligation to pay any commissions to [Malaysian Subsidiary] with respect to any orders for the Products received from any customer outside of the Territory. [Malaysian Subsidiary] shall have no power or authority to (i) sell any of the products, (ii) enter into any contract or binding agreement with respect to the products, or (iii) accept or fill any orders for the Products." Thus, the unit's rights to sell and service goods are distinguished from other units that also sell and service goods within the firm.

The rights defined in the formal contract provide transparency as to the possible actions of the parties and their possible payoffs. For difficult to contract activities, assigning control rights to make decisions over assets and receive the income from those decisions alleviates ambiguity as to what will occur – one unit will hold authority and call the shots. For instance, in the Appendix, the formal contract specifies that the manufacturing unit has residual control rights over all intellectual property related to the products. The distributing unit has rights to distribute products in the territory and to enter into contracts for service agreements with customers regarding the products. The manufacturing unit maintains control rights over approving marketing materials that the distributor creates and pricing products.

Notably, these internal contracts assign transaction-level authority and rights to access assets. Numerous studies have found that markets contain authority properties (Macaulay 1963, Stinchcombe 1985) that are established through formal contracts that specify the quality control and inspection systems and rights over assets, decisions, and modifications to contractual provisions (Gulati and Singh 1998; see, e.g. Stinchcombe 1984 for a list of hierarchical elements that are established through contracts). Similarly,

intra-firm formal contracts can assign control rights (including to income streams, which serve as contractual safeguards—see Dewatripont and Tirole (1994)) and establish monitoring mechanisms, some of which can be seen in the example in the Appendix. Thus, formal contracts are a way of explicitly codifying the allocation of control and decision rights over assets in an internal transaction.

Formalizing the intra-firm agreement in the contract can lead units to reveal more information as they negotiate the exchange because they must codify it in writing and sign the agreement. The parties' concerns in reaching their goals and their willingness to make concessions to reach a mutual agreement are evidenced in the formal contracts. For instance, in a formal contract on a purchasing agreement between a retail subsidiary and a trading subsidiary, the retail subsidiary wanted the flexibility in its ability to deviate from the typical inventory supplied by the trading subsidiary, but the trading subsidiary was concerned that the retail subsidiary would source lower quality goods that might undermine the brand or disintermediate the trading subsidiary. The formal contract specifies that:

> *"In the event that the [Retail Subsidiary] finds that it is in the [Retail Subsidiary]'s best interest to deviate from its past practices regarding the inventory level or type of Merchandise that it shall carry in the Stores (collectively, "Additional Merchandise"), then... the [Retail Subsidiary] may purchase such Additional Merchandise from any other vendor approved by [Trading Subsidiary] in its reasonable discretion; provided, however, that [Trading Subsidiary] shall still continue to provide the [Retail Subsidiary] with all of its commercially reasonable requirements regarding the Merchandise and provided further that all Additional Merchandise purchased from any source other than [Trading Subsidiary] shall be of a standard of quality at least as high as the Merchandise supplied to the [Retail Subsidiary] by [Trading Subsidiary]. To the extent necessary, the [Retail Subsidiary] shall cause the sources of Additional Merchandise to obtain licenses for production from [Trading Subsidiary] and to submit for review by Trading's Counsel (designated in Section 5.1) samples of all proposed Additional Merchandise to be purchased from a source other than [Trading Subsidiary]. The [Retail Subsidiary] shall not sell or otherwise distribute Additional Merchandise without [Trading Subsidiary]'s written approval."*[13]

In the process of negotiating the formal contracts, the units detail how they will work together and how they might be able to verify the activities of the other unit. To illustrate, a computer equipment company has a formal contract between a Singapore manufacturing subsidiary and a French service subsidiary. The contract specifies that they will interact using English language, that the French

[13] Redacted example from an intra-firm formal contract between a retail subsidiary and a trading subsidiary.

subsidiary will be subject to the export controls of the United States Department of State and Commerce, and specifies the Singapore subsidiary has the rights to monitor, inspect, and audit the books and facilities of the French subsidiary.

Commitment device. Formal contracts are a commitment device that restricts a party's future choice set by making certain choices more expensive (Bryan et al. 2010). Formal contracts require mutual consent and must be signed by managers of the units. Symbolic acts of commitment can reinforce the commitment to an agreement (Exley and Naecker 2017). They provide a record of what was agreed to in the exchange and grant rights to monitor compliance with contract terms (Hadfield and Bozovic 2016). For agreements to be enforced by others, one needs to know what was breached, and therefore agreements almost always have to be written in order to be enforced (Markovits and Rauterberg 2018). Formal intra-firm contracts safeguard against defecting, expose the units to penalties, sanctions, and reputation costs if they violate, making it more difficult for political intervention (or for the parent to impose a decision not aligned with the original agreement). For instance, as noted by a director that sits on several service firm boards, service firms use formal contracts to force units to precisely define the output to be provided so that the scope or criteria for the deliverable may not be arbitrarily changed after the work is in progress or completed. This practice has successfully reduced conflict between units over complex deliverables.[14]

Specification of adjudication and enforcement rights further enhances the credibility and commitment of the units to the rights assigned. For managers, a key advantage of using formal contracts has an alternative dispute resolution mechanism where the units do not need to seek executive intervention or wait as issues are escalated. Formal contracting reduces uncertainty regarding the outcome of top management intervention, which may be subject to political pressures. Shifting dispute resolution away from managers to insulated adjudicators can temper internal politics (Rauterberg 2016) and undermine the parent's reputation if it intervenes. Consequently, formal contracts act as commitment and communication devices within firms and are valuable even if they are not legally enforceable.

[14] Information from an interview by one of the authors on January 8, 2019.

Formal Contracts as Communication and Commitment Devices: Example

To illustrate, a managing head of a trading room from JP Morgan Chase relates that, before the JP Morgan merger with Chase, JP Morgan used informal agreements between units. Any time a new trading desk was needed, the manager would negotiate the desk with the IT group located in India. There were many back and forth discussions and a lot of time spent to reach an agreement. The manager commented,

> *Before the formal contracts were put in place, it was a hassle. It was really complex. We spent so much time having to work things out and come to a common understanding. A lot of time was wasted. There were too many issues and we would never seem to know who to go to or who was going to be responsible to pay for it when something new came up.*

The informal agreements lacked clarity and caused inefficiency. After the acquisition of Chase, JP Morgan Chase began using formal contracts for all intra-firm transactions. The manager remarked,

> *What a relief it was once we had formal contracts…It provided a common language that everyone could understand.…It also made it easier to have good relationships with people in other units. There were no longer discussions. We knew what to expect and what we were supposed to do, and who was to approve or pay for what…People stopped fighting about things. No one wants to fight with their boss or the person that works with you. No one wants to be the one to go against what was already agreed to.*[15]

This example highlights the clarity and commitment value of the formal contract. For managers, solidifying rights and responsibilities for the transaction reduces conflict and politics.

Costliness of Top Management Intervention

Although top management can step in to resolve to disputes from informal agreements, it is costly for top management to use fiat to intervene in disputes. Top management intervention tempers units' incentives (Aghion and Tirole 1994, Baker et al. 1999). Managers do not want executives to intervene excessively or inappropriately and often are uncertain about when executive intervention is desirable (Brickley et al. 1996, Garicano 2000).

Having a high-ranking executive adjudicate disputes can have many adverse consequences—for the managers involved and for firms. Eccles and White (1988) note that managers are reluctant to raise issues since it can have reputational effects, undermining the manager's perceived competence and lead to lost

[15] Interviewed on March 19, 2020.

autonomy and reduced career prospects. For example, when P&G undertook its Organization 2005 reorganization, there was an implicit warning attached to every escalation of a dispute that the parties involved would be replaced the next time a dispute was escalated (Piskorski and Spadini 2007:17).

Raising disputes or decisions through the many layers of a firm often reduces efficiency (Aghion et al. 2014, Argyres 1995). Top management has limited information processing capacity and limited ability to collect information from lower levels of the organization (Aghion and Tirole 1997, Hart 1995). Beshears and Gino (2015) refer to leaders as "decision architects" who design firms in such a way that decisions are made effectively at the appropriate level without constant interference from above or dysfunctions from cognitive biases or information problems. It is beneficial to have decision-making and conflict resolution mechanisms proximate to where information resides in the organization (Dobrajska et al. 2015). The idea that firms can easily and cheaply use fiat to resolve disputes is at odds with the political behavior within firms (Hu et al. 2017, Oswald and Jahera 1991). Having someone with less knowledge of the transaction making key decisions leads to suboptimal outcomes for the units involved and the firm overall. Consequently, managerial fiat should be an option of last resort (Leavitt 2005).

It can be more effective for executives to use their authority to set the rules around which lower levels of the organization transact (also referred to as Type II authority, Simon 1991). For instance, in the engineering firm Mott MacDonald, top management set policies for unit managers to follow when they contract to give managers clear guidance. Every internal transaction over £25,000 must have a formal contract with clear procedures for the units to bid and create the formal contracts.[16]

Because formal contracts are communication and commitment devices that can enhance the clarity and credibility of the exchange and provide a mechanism for adjudication to enforce the agreement that does not involve appeals to fiat, formal contracts can facilitate certain types of intra-firm transactions.

PROPOSITIONS

Choice between Informal Agreements and Formal Contracts

[16] Information provided in an interview with a senior manager on October 12, 2019.

We focus our theorizing on when firms choose to rely on a formal contract as an additional governance mechanism versus relying on an informal agreement without using a formal contract. Our baseline expectation is that firms will use unwritten, informal agreements for internal transactions and will only complement informal agreements with formal contracts when the benefits outweigh the costs of creating the formal contract.

In theorizing about the use of formal contracts, we focus on factors that are most likely to influence the clarity and credibility of these intra-firm transactions. The internal governance decision should be based on transaction characteristics, the attributes of the parties and their relationship to one another, and the costs of relying on fiat to resolve disputes. The transaction attributes most likely to influence clarity and credibility are complexity and liability. Complex transactions tend to have more conflict, and clarity is a common concern as parties think they understand the situation but are often not on the same page (e.g., Mayer and Argyres 2004). Liability is also a major issue that can lead firms to engage in strategic behaviors and threaten their commitment to informal agreements (e.g., Roberts 2007). In terms of the relationship between the parties, those who are more similar are likely to encounter fewer transaction difficulties because of their shared context and experience, creating a common frame to understand their agreement (e.g., Mayer and Weber, 2014). Thus, the differences between parties are likely to lead to an enhanced need for a formal intra-firm contract. Finally, the cost of available dispute resolution mechanisms is a critical element of governance choice (e.g., Williamson 1991). Internally, the default dispute resolution mechanism for informal agreements is fiat, so we are more likely to observe formal contracts when fiat is likely to lead to problematic outcomes, such as when local (contextual) knowledge is key to making optimal choices about the governance of the transaction. While we do not argue that these four factors are exhaustive, we believe they are in line with extant research and represent the main decision factors for deciding when to utilize a formal contract.

Transactional Complexity. A transaction is considered complex when it involves many different actions by each transaction partner. Complex transactions require extensive relational knowledge of each party's tasks and payoffs. However, because understanding tasks is embedded in tacit knowledge,

relational knowledge of the other party's tasks in the transaction can be difficult to transfer and build across units (Gibbons and Henderson 2012, Helper and Henderson 2014). Informal agreements are especially difficult to build when parties interact in complex ways (Gibbons and Henderson 2012). The more complex the transaction, the more difficult it is to understand each party's role, what it will do in different circumstances, and its potential payoffs. Complex relationships between units give rise to conflict over responsibilities and power (Kretschmer and Puranam 2008), posing challenges for informal agreements.

Formalized property rights allocations provide clarity on authority in the complex relationship to coordinate adaptation to unforeseen changes and direct the other unit in the transaction. For example, in the case of the formal contract in the Appendix, the rights give units control over mechanisms for joint adaptation, such as the specification of information disclosure, distribution of costs and benefits of contingencies, and provisions for dispute resolution, all of which serve to coordinate complex activities and align expectations (Ryall and Sampson 2009).

When there is high transactional complexity, formal contracts clarify unit roles through ex-ante specifying who has the rights to perform particular activities and rights to income. Formal contracts are more effective than informal agreements in providing clarity and securing the rights and interests of the parties, including decision rights under different circumstances (Reuer and Ariño 2007), and thus do more to help avoid future conflicts over responsibilities and power. By allocating rights to particular aspects of the complex exchange to the different units, even though the units may not fully comprehend the other's tacit knowledge about the task, a formal contract aligns expectations and creates a mutual understanding of the rights and responsibilities of the parties (Malmgren 1961, Mayer and Argyres 2004). Parties tend to think about the exchange more carefully and ask more questions (and thus get more information) when they have to draft and sign a contract compared to when they simply verbally agree. A formal contract forces the parties to negotiate the rights and responsibilities explicitly and thus reduces ambiguity (Carson et al. 2006, Klein and Leffler 1981). Just as formal contracts between firms serve to "plan the collaboration, set partner expectations, and consequently reduce misunderstandings and costly missteps"

(Ryall and Sampson 2009: 208), intra-firm formal contracts, through clearly and credibility allocating rights, can provide transparency for coordinating complex activities.

The JP Morgan example above demonstrates how a complex transaction that takes a lot of effort to execute under an informal agreement became more efficient and effective after the adoption of formal contracts because the transaction clarified the rights of the parties and was a commitment mechanism that prevented people from going against the agreement. Therefore, we propose:

Proposition 1: The greater the complexity of a transaction, the more likely a formal contract will be used to govern the internal transaction.

***Transactional Liability*.** Many transactions involved large *liabilities*—potential costs associated with failed products, projects, or service errors. Liabilities are a form of externality. Externalities occur when a pecuniary or nonpecuniary cost or benefit affects a third party that did not choose to bear it (Demsetz 1967). Liability apportionment can cause tension in the event of an adverse outcome where one unit bears the brunt of the consequences. Therefore, the value of defecting on an informal agreement is influenced by externalities: units may seek to shift liabilities to others or appropriate windfalls (Macleod and Malcomson 1993, Roberts 2007). Managers care about the performance of their units since it affects their bonuses, career evaluations, and resources they control and are often motivated to respond to externalities in a self-interested manner (Roberts 2007). Thus, externalities frequently are a source of tension, conflict, and politics between units and can lead to suboptimal transactional outcomes.

As incentives to defect increase, informally allocated property rights are no longer sufficient for the relationship (Libecap 1993). Mayer, Nickerson & Owan (2004) examine the benefits of specific types of contractually guaranteed monitoring rights in the presence of externalities. The greater the potential liability arising from externalities, the more likely the credibility of the informal agreement will be called into question. The implicit nature of property rights under informal agreements leads to misunderstandings on the roles and weaker incentives of the units in managing these types of externalities. Ambiguous property rights reduce motivation to manage externalities (Libecap 1993, Segal and Whinston 2013), which gives rise to moral hazard where units may not exert effort to effectively

manage externalities (Eisenhardt 1989, Jensen and Meckling 1995).

Formalized property rights enhance the efficiency and effectiveness of the use of assets and resources when there are externalities such as costly liabilities (Segal and Whinston 2013). Formalized property rights establish which units incur the beneficial and harmful effects of the transaction and thus internalize the consequences of liabilities. A central function of property rights is internalising externalities (both beneficial and detrimental effects) (Demsetz 1967:348). Formalizing property rights addresses problems with incentives for using assets and externalities by giving parties control rights and income rights; thus the costs and benefits of externalities are allocated to the party that is taking action (Libecap 1993). Such allocation of rights provides a means to safeguard assets, where units are motivated to maximize the asset's value (Schepker et al. 2014).

Formal contracts inside the firm most effectively ensure that the division whose actions are primarily responsible for problems ex-post bear the costs associated with those problems. For firms, understanding if one division or another is liable for an error matters because knowing liability helps the firm evaluate its managers' performance and achieve a more efficient internal resource allocation. It provides greater clarity to track and monitor units and unit manager performance and therefore becomes easier to apply incentives and career concerns to foster unit manager incentives (Aghion and Tirole 1995). This, for instance, motivates internal suppliers to provide higher quality components. Thus, it facilitates adaptation: the unit bearing the costs and income is motivated to actively respond and manage a negative outcome without arguing about responsibility.

For managers of the transacting units, the rights allocated are important, especially when things go awry. For example, within the buildings and infrastructure division of the engineering firm Mott MacDonald, there is a highway unit, an infrastructure unit, a structural unit, and a tunnels unit. When one unit gets a project but does not have the capabilities to perform the entire project, it will contract other units within the firm for the parts of the project that it needs. Thus, when the tunnels unit receives a third-party job to build a new rail line but does not have the expertise for the land drainage work, it contracts the infrastructure unit. An internal formal contract between the tunnels unit and the infrastructure unit is

negotiated and signed by the managers. The contract outlines the price, the scope of work, a work plan of the activities required to complete the work, the timeframe for completing it, and warranties and liabilities for the project. For the managers involved, their scope of work, liability, and responsibility are critical. These provisions determine who will be held accountable if problems arise. If the infrastructure unit does not meet the deadline or fails to meet quality and safety standards or deliver what was promised, it is liable. If changes are required due to the tunnels unit or if the scope of work changes, the contract stipulates that the tunnels unit would bear the responsibility and costs. As stated in an interview with a manager,

> *Contracts are important for assigning responsibility. No one wants to bear the liability or risk in the project. If you are assigned it in the contract, that means it is on you and you are held accountable when things go wrong. If it is assigned to you, you make sure everything happens so that things do not go wrong.*[17]

Thus, formal contracts provide a clear assignment of liabilities in the transactional exchange so that units direct their attention to mitigating the problems for which they are responsible. The rights allocated provide information about each unit's performance and alleviate the "moral hazard in teams" problems (Aghion and Tirole 1995). Further, combining control and income rights increases the party's incentives to focus on managing the asset to limit harmful costs and enhance benefits (Demsetz 1967; Ostrom 2000). Finally, formalization enhances accountability and thereby incentivizes appropriate ex-ante action to avoid ex-post liability. Therefore, we propose:

Proposition 2: The greater the potential liability of an internal transaction, the more likely a formal contract will be used to govern the internal transaction.

Differences in transacting units. Transacting units may differ in terms of their roles, tasks, knowledge, culture, and/or geographic location or very similar along one or more of these dimensions. For instance, an electronics company has two manufacturing units located in Japan. One manufacturing unit sells its components to the other unit, while the other unit sells its products to a distribution unit located in Germany. The two Japanese manufacturing units are more similar in terms of key performance

[17] Information provided in interview with manager of the engineering firm on October 12, 2019.

metrics and goals, knowledge and expertise, geography, and culture. They, therefore, are more likely to share understandings and expectations. The similarities enable a common understanding of task and relational knowledge that serves to facilitate the exchange.

Although information may be easier to share within firms than across a firm boundary, differences in specialization and location can lead to information asymmetry between transacting units, which affects the understanding of the transactions to be carried out and decisions to be made. Heterogeneous parties often do not understand or recognize informal rights (Libecap 1993). Divergence in the characteristics of transacting units can lead to differences in unit perspectives, goals, and identity (Gil and Marion 2013). All of which may create misunderstandings and misaligned expectations about each unit's rights and responsibilities for the transaction and make informal agreements difficult to build and sustain.

While many types of differences may influence how divisions interact, we will briefly discuss three to help illustrate the role of differences in creating a need for a formal contract for intra-firm transactions: functional differences, geographic differences, and cultural differences. These types of differences raise clarity and credibility issues for informal agreements. First, functionally similar units will have a stronger common understanding based on their shared knowledge of their functional domain. It is more difficult to share relational knowledge and clarify expectations when the units perform very different functions that require distinct expertise. Moreover, functions have different incentive systems. To illustrate, in a multinational consumer goods company, the manufacturing units are evaluated based on their costs per unit and the distributors are assessed based on their sales revenue. Differences in goals lead to diverging preferences and self-interested actions that violate the agreement. As incentives diverge, the benefits from defecting increase and informal agreements' effectiveness in governing transactions are reduced.

Second, geographic distance makes it costlier to observe the actions of the other unit, more difficult to build relationships, more likely that the units will have different norms due to influences of the local environment. Thus geographically remote units will find it more challenging to build an effective informal agreement. In addition, the frequency of communication declines with distance (Giroud 2013), further complicating informal agreements. Lack of frequent interaction reduces the ability to transfer tacit

relational knowledge. It also reduces insight for the available courses of action and cause and effect relationships (Klein and Leffler 1981, Levin 2003). In contrast, when units communicate more frequently or intensively, their actions are more likely to be observed, and they are more likely to develop reputational capital (Macleod 2007). Therefore the units are more likely to adhere to an informal agreement (Gibbons and Henderson 2012). Empirical studies have found that alliance partners are more likely to use formal property rights when the parties are less proximate to each other (Robinson and Stuart 2007).

Finally, cultural differences create divergences in implicit understandings about the norms of behavior and how to act in different circumstances. Such divergences undermine the clarity of informal agreements as each party has a different implicit understanding of the actions to be carried out. There is a large literature on the effects of cultural distance (e.g., Fisman et al. 2017, Hegde and Tumlinson 2014), but the main takeaway here is that this type of distance increases the potential for misunderstandings and even perceptions of opportunism because of the misaligned expectations. Different cultures can also have different views of the appropriateness of sticking to verbal commitments versus seeing only formal commitments as truly binding (e.g., Beck et al. 2018). In summary, these three types of distance all pose significant challenges for informal agreements and create a situation in which formal contracts can facilitate more effective governance of intra-firm transactions.

Formally allocated property rights secure the parties' interests in the transaction and are particularly useful the more differences there are between the transacting parties. The formal allocation clarifies the promises made in the agreement and commitment that bolsters the units' credibility in executing the transaction. Units that are dissimilar in terms of function, geography, and culture will be unlikely to reach a credible shared understanding that would facilitate the use of an informal agreement to govern the transaction effectively. However, a formal contract provides greater clarity and provisions (e.g., monitoring rights, address liability issues, and specify penalties), which can enhance the ability to create a clear and credible agreement that will result in a successful transaction. Therefore, we propose:

Proposition 3: The greater the differences between units involved in the transaction,

the more likely a formal contract will be used to govern the internal transaction.

Importance of Unit Decision Making Expertise (Local Knowledge). Informal agreements within firms are vulnerable to intervention by top management such that rights allocated in informal agreements are considered "loaned not owned" (Baker et al. 1999: 56). Extant work focuses on two types of intervention: intervening in control rights and intervening in rights to income (Baker et al. 1999, Foss et al. 2012, Williamson 1985). The ability to intervene in informal agreements can undermine the credibility of the agreement and tempers unit incentives to incorporate relevant information and maximize effort in decision making (Aghion and Tirole 1994, Baker et al. 1999).

When local (contextual) knowledge is really important, fiat-based intervention is more likely to result in a worse outcome than when the relevant knowledge to make an effective decision is more high level or easily understood with minimal contextual nuance. Problems with intervention are especially costly when local unit knowledge is vital for performance outcomes. Information and knowledge are difficult to transfer, creating significant impediments to clarity for an informal agreement. Often units have information and expertise not available to or not verifiable by top management (Foss et al. 2012). Relevant expertise significantly affects the ability to assess ideas, comprehend their implications, and make relevant decisions (Fabrizio and Thomas 2012).

To illustrate, for a large pharmaceutical company, a unit with specialized expertise in drug discovery has deep insight into the research process and which future projects may be more valuable to invest. For this unit, their expertise in selecting and directing research projects is valuable. Intervention that tempers this unit's incentives to propose projects is costly because others do not have similar expertise for achieving successful innovations in this area. This is contrasted with a unit in the same pharmaceutical firm that runs clinical trials. The expertise required for running clinical trials is less specialized or tacit. Thus, the effects of reduced incentive of the unit to propose new ideas or exert effort due to intervention are less costly.

When local knowledge is vital in making decisions about organising the transactions, greater effort should be taken to reduce the likelihood of fiat-based intervention. Formal intra-firm contracts serve to

more clearly codify the agreement and enhance credibility while allowing the parties to articulate a dispute resolution mechanism. While the parties are unlikely to eliminate the chances of upper management exercising fiat and changing the terms of the internal contract, they can minimize the probability of this happening with a well-crafted formal intra-firm contract.

The formal contract serves as a commitment mechanism that increases the costs of intervention and creates high adjustment costs for removing rights, enhancing the credibility of property rights, including control and income rights to the assets (Magelssen 2020). By explicitly writing and agreeing to the terms of the formal contract, the formal contract enhances the verifiability of whether the parent intervenes to counter the original agreement and thus can create a greater cost to the parent's reputation than informal agreements. Moreover, assigning dispute resolution to a party not within the chain of command puts top management one step farther away from intervening in the transaction. Allocating control rights provides units with incentives to invest effort (Aghion and Tirole 1997) and incorporate local information in decisions (Dessein 2002, Foss et al. 2011). The enhanced credibility of property rights provides the unit with the incentives to exert effort and take the initiative (Magelssen 2020), making formal contracts beneficial for governing the exchange.

Proposition 4: The greater that unit decision making expertise (local knowledge) is crucial for the transaction, the more likely a formal contract will be used to govern the internal transaction.

Legal Distinction Between Units

Scholarly emphasis on informal agreements to govern intra-firm transactions is due to the idea that any intra-firm formal contracts are not enforceable in courts of law and therefore are not credible (Baker et al. 1999, 2002, 2011, Williamson 1975). Williamson (1991) refers to the contract law regime within the firm as forbearance due to the fact that courts typically do not intervene in intra-firm disputes. Extant work, however, overlooks the legal structure of the corporate group. Transacting units within the firm may be non-legally distinct units, such as a digital strategy business unit or a change management business unit in a consulting firm, or they may be legally distinct units, such as wholly-owned corporate

subsidiaries. [18] Corporate groups composed of wholly or partially owned legally distinct units (subsidiaries) represent a significant portion of firms worldwide (Bethel and Liebeskind 1998). Thus, the governance of transactions can be expanded within hierarchies to include transactions between units that are separate legal entities and between units that are not separate legal entities (see Figure 2).

Insert Figure 2 here

The legal distinction matters because legally distinct units have legal standing in courts of law even though they are part of a larger firm (see e.g., Sinclair Oil Corp. v. Levien, 280 A.2d 717 (Del. 1971)). Bethel and Liebeskind (1998) noted that subsidiaries have the same legal right to contract as any legally incorporated firm. Courts respect the concept of separate legal entities and uphold the rights assigned to subsidiaries. Claimants against a subsidiary generally cannot seek recourse from the parent (e.g. In re Union Carbide Corp. Gas Plant Disaster, 809 F.2d 195 (2d Cir. 1987), cert. denied, 484 U.S. 871(1987); United States v. Bestfoods et al., 524 U.S. 51 (1998)) [19] and top management cannot transfer property rights without adequate compensation to a unit (EY 2013; OECD TPG).

Legally distinct units must fulfil local regulatory reporting criteria concerning the activities and responsibilities of the unit and have legal and financial obligations for employees, suppliers and customers, debt holders, and minority shareholders (if any). Although the parent often bears responsibility for the actions of its legal units, it is not necessarily the case (U.S. v. Bestfoods et al., 524 U.S. 51 (1998); U.S. v. Kayser-Roth, 272 F.3d 89 (1st Cir. 2001) Legal units can go bankrupt, and, depending on the circumstances (e.g. "piercing the corporate veil"), the parent may not be held accountable.

Non-legally distinct units, in contrast, may be tracked separately with business unit financial and operational reporting within the firm but do not have to report to external stakeholders separately. The

[18] Legally distinct entities, also referred to as legally defined units or subsidiaries, are units within the corporate group that have legal entity status in courts of law.

[19] Justice Souter delivered the opinion of the Court, writing: "It is a general principle of corporate law deeply 'ingrained in our economic and legal systems' that a parent corporation . . . is not liable for the acts of its subsidiaries . . . 'Neither does the mere fact that there exists a parent-subsidiary relationship between two corporations make the one liable for the torts of its affiliate'" (Quoting Douglas and Shanks 1929).

parent is held accountable for legal and financial responsibilities to external stakeholders for the activities of non-legally distinct units.

Quasi-formal and formal contracts. Because subsidiaries have legal standing, their intra-firm contracts specify the court of law under which disputes can be submitted. For example, the intra-firm formal contract in the appendix specifies that "Any dispute between the parties relating to the validity, performance, interpretation or construction of this Agreement shall be submitted to the courts located within the State of [U.S.A. STATE], U.S.A." In contrast, non-legally defined units leverage alternative dispute resolution mechanisms, such as a committee, agreed-upon adjudicator, panels of peers, an independent arbitrator appointed by the firm's board, an internal court system, business group, or a third business unit that is not involved in the transaction (Rauterberg 2016). Therefore, we distinguish between intra-firm quasi-formal contracts that assign adjudication away from the direct line of authority within the firm (but occur within a single legal entity) and intra-firm formal contracts between legally distinct entities and assign adjudication to a party external to the firm.

When a breach of an intra-firm formal contract occurs, subsidiaries have the right to sue other subsidiaries in courts of law (Bethel and Liebeskind 1998). A VP at Paramount Pictures noted that any such disputes would likely be resolved internally before going to court. It is very costly to pay legal fees on both sides of the court case. Since the transfer of a court settlement is internal, firms try to avoid legal costs by resolving the dispute internally and withdraw the court case before the entire process unfolds with a court ruling. [20]

Formal contracts between subsidiaries can also be called upon in courts of law for issues related to minority rights (whether a minority owner is treated fairly, or whether the firm is transacting with related parties in an unfair manner for the focal subsidiary), buyers and suppliers (for recourse over transactional issues tracing the rights back within the firm), and for creditors (that income is in accordance with its income rights–particularly if the subsidiary is going bankrupt). Governments uphold subsidiary property

[20] From an interview conducted on March 7, 2021.

rights assigned in formal contracts and require that the firm compensates a subsidiary for the net present value of the rights to the asset if top management or a unit wants to transfer property rights internally (e.g., OECD TPG; IRS Treas. Reg. §1.482). Transfers of property rights between legal entities are heavily scrutinized by tax authorities (particularly those related to intellectual property). The firm can be exposed to penalties if it does not adequately compensate the units for transferring property rights (see, e.g., Stamp v. Inamed Corp., 777 F. Supp. 623 (N.D. Ill. 1991); IRS 2006). This creates costs for top management intervening in the formal contracts and/or transferring the rights allocated to the units. Top management may be less inclined to intervene unless the benefits outweigh the negative reputational costs, adjustment costs, and/or possible sanctions if regulatory bodies intervene.

Logics of enforcement. Intra-firm formal contracts have different logics of enforcement (resolving disputes) depending on whether the formal contract is between non-legally distinct or legally distinct units (see Table 2). Disputes involving quasi-formal contracts are more likely to be decided based on the strategic importance to the firm. Adjudication by parties employed by the firm that understands the firm and have vested interest in its success will be more likely to consider strategic factors for the firm in adjudicating disputes and thus are more likely to weigh the firm's best interest in resolving the dispute.

Insert Table 2 Here

The logic of enforcement for formal contracts between legally distinct units is based on the parties' intent as interpreted by a third party. Courts of law rely on intent in deciding disputes. External stakeholders such as tax authorities, local regulatory bodies, minority shareholders, lenders, creditors, suppliers, and customers may take actions to ensure adherence to the terms of the intra-firm formal contract (FDIC v. AmFin Financial Corp. 757 F.3d 530 (6th Cir. 2014); In re Bob Richards Chrysler-Plymouth Corp. 473 F.2d 262 (9th Cir. 1973); General Rubber Co. v. Benedict, 215 N.Y. 18, 109 N.E. 96 (1915)). In so doing, it provides an additional condition that can restrict or increase the costs for the set of actions that top management can take, enhancing the credibility of the formal contract will be upheld.

The difference in the legal standing of various units within the firm calls into question the concept of forbearance as the contract law regime within the firm (Williamson 1991). The idea that firms control the resolution of all disputes within their boundaries is limited by the firm's choice to create separate legal entities, shifting the legal regime to involve third parties, including the courts. Most theories of the firm focus on firms as a single legal entity in which managerial fiat can be used to adjudicate disputes. However, an expanded view that also considers the units within the corporate group provides a more nuanced understanding. Intra-firm quasi-formal contracts provide communication and credibility benefits. Shifting to intra-firm formal contracts between legally distinct units introduces the possibility for third party enforcement and makes contract formalization even more valuable to the firm.

Implications. A key reason to use intra-firm formal contracts is that they increase the costs of intervening in the transaction and, therefore, enhance the intra-firm agreement's credibility. We, therefore, expect that Propositions 1-4 above are likely to be even more critical when the transacting internal parties are legally distinct entities. Governments uphold subsidiary property rights and can impose costly penalties if top management intervenes in the control or income rights of a subsidiary (EY, 2013). Since firms are required to compensate subsidiaries for the net present value of their rights to the assets and internal transfers of property rights are heavily scrutinized by tax authorities, top management often considers transferring or revoking subsidiary property rights for key assets such as key intellectual property to be prohibitively costly. [21] Similarly, courts will uphold the rights and legal standing of legally defined units to utilize third party enforcement mechanisms (e.g., the U.S. legal system) to adjudicate contract disputes, including disputes against improper intervention by the parent (see e.g., The Chemours Company v. DowDuPont Inc., et al., C.A. No. 2019-0351-SG (Del. Ch. Mar. 30, 2020).

Intra-firm, the legally distinct units can use the third parties to reinforce their rights for intra-organizational issues. For instance, in some tax court cases, a wholly-owned subsidiary manager may use the local tax authority to discipline the parent by leveraging the local government's ability to impose

[21] Information provided in interviews with multinational firm executives and experts.

penalties if the parent does not adhere to the contract. In addition, before ever going to the local government, managers frequently leverage the ability of the local government to penalize the parent if it adjusts their rights (by intervening in the agreement) without adequate compensation. Consequently, the subsidiary may not have to sue but instead uses the legitimate threat of a third-party enforcer to step in to penalize the parent. Importantly, using a third-party enforcement mechanism alleviates some tension with the subsidiaries' internal reputation because the subsidiary unit does not need to sue its parent. Yet, it can, either openly or discreetly, leverage a third party to uphold the formal contract terms. Thus, the threat of the subsidiary suing the parent increases the costs of the parent intervening. Therefore, in legally distinct units, the intra-firm formal contract significantly enhances the agreement's credibility due to the potential for third-party enforcement.

Conversely, the formal contract also provides the parent with mechanisms to discipline managers of the units. They formally assign responsibility and include clauses for the unit adhering to laws such as international trade and export laws, foreign corrupt practice act, and accounting standards. Subsidiary breaches of the contracts can then affect the managers' career prospects. Consequently, the legal standing of the unit can provide further enhanced credibility than quasi-formal contracts.

DISCUSSION

Given the sheer economic significance of internalized transactions (e.g., Scott 2009) and the theoretical importance of understanding the role of formal contracts in internal transactions, it is important to understand how firms make these internal governance decisions. Contrary to the notion that formal contracts are non-credible within the firm and therefore should not exist internally (Baker et al. 2001, Williamson 1985), firms often use formal contracts to govern internal transactions. While a great deal of research has focused on a wide variety of market and hybrid governance arrangements, much less attention has been paid to intra-firm transactions. Building on the relational contracting literature that suggests that several factors hinder the successful development of informal agreements within firms (Gibbons and Henderson 2012, Gil and Zanarone 2018), we suggest that the factors that make informal agreements difficult to develop and maintain may be alleviated by using formal contracts to more clearly

and credibly assign internal property rights. While scholars have emphasized the use of informal agreements when actions cannot be fully specified in advance (e.g. Gibbons and Henderson 2012), a property rights perspective provides the role of formal contracts as delineating and credibly assigning control rights, which enables adaptation for unforeseen events and contingencies by assigning transaction-level incentives and authority for adaptation.

In contributing to the literature on the governance of transactions within firms, we conceptualize the firm as a set of legally and non-legally distinct units that contract with each other. Thus, we expand on the choice of hierarchy by examining the options for governing transactions internally, a central implication of which is that formal contracts between legal units may be enforced in courts of law and may be used by external stakeholders to hold the firm to the intra-firm formal contract terms. Thus, formal contracts can bind the range of actions that top management may take.

Zenger and Hesterly (1997) assert that because firms are increasingly becoming disaggregated structures of units that interact with each other in market-like ways, we must rethink the traditional comparative institutional framework. Several scholars have noted the abundance of "internal hybrids" – governance structures incorporating market mechanisms within the firm (Makadok and Coff 2009, Zenger 2002). While these studies recognize that firms increasingly have market-like attributes, they do not address how, given increasing disaggregation within firms, formal contracts enable the firm to address internal exchange problems. We draw on research that questions the view of firms and markets as discrete institutions (Eccles and White 1988, Stinchcombe 1985) and we add formal contracts as a mechanism that introduces market-like attributes, beyond higher-powered incentives, within the firm. An important implication is that formal contracts affect not only pricing and incentives but also coordination factors, as the contracts specify unit rights, including control rights over aspects of the transaction.

Organizations are increasingly complex (Ghoshal and Bartlett 1990), which makes coordinating adaptation and resolving all transactional problems by commanding authority (Type I authority) and informal governance less effective and even infeasible for many firms. Commanding authority may be well-suited for relatively certain transactions, but the limitations of hierarchy become apparent as a firm

grows and its internal transactions become more numerous and complex. Moreover, transactional problems give rise to coordination and incentive issues that commanding authority alone cannot fully resolve. We theorize that formal contracts are a way in which the firm employs Type II authority within the firm. Formal contracts alleviate the burden on top management to coordinate activities and address conflicts among subunits.

Consequently, top managers can oversee more transactions, which is essential as the firm grows. Williamson (1985:135) asserted that selective intervention is impossible because otherwise, if firms could mimic markets, we would observe one enormous firm. Yet, media highlights the rise of big firms that account for significant percentages of the global economy. The world's 500 largest firms accounted for over 21% of the global economy in 2019, and Fortune 500 firms accounted for two-thirds of U.S. gross domestic product in 2019 (Fortune 2019). Williamson (1985, 1996) was clear that the weaknesses of hierarchy (internal organization) include attenuated incentives, bureaucracy, and the impossibility of selective intervention. We suggest that formal contracts can create stronger incentives and decrease bureaucratic interventions in transactions. This study offers intra-firm formal contracts as a reason for the increasing prevalence and size of large firms.

This study raises important questions about the boundaries of the firm. We build upon property rights theory, where the ownership of assets can stop hold-up problems from a party (Grossman and Hart 1986b). Thus, one key difference from a property rights perspective is that although opportunism persists within the firm, the way that it plays out within versus across firms in transactions is different. Internalization changes the opportunity set of actions available to the units involved in the transaction. Once a transaction is internalized, no longer do the parties involved have to worry about value expropriation where one party may walk away from the exchange. For instance, an internal supplier cannot walk away with assets and sell them to a competitor. Instead, opportunism exists in the form of political activity and strategic sharing of information (Hölmstrom 1979, Jensen and Meckling 1979).

Another key difference is that in markets, formal contracts are negotiated by separate firms, whereas in firms, the formal contracts are negotiated with related units and have the potential of a third

party (i.e. the parent) that can step in and mediate the terms of the contract between units. In markets, scholars have studied the distortions of rights allocated in formal contracts due to size (Leiponen 2008, Lerner and Merges 2003), power (Elfenbein and Lerner 2003), and financial resources of the entities (Elfenbein and Lerner 2003, Lerner et al. 2003, Lerner and Merges 1998). Within firms, the parent may force the units to allocate rights in ways that markets do not. Thus, although internal and external formal contracts have similar *components*, the *allocation of rights* within those components may be different. This can both provide advantages in the form of gains from when markets would achieve inefficient resource allocations and disadvantages that might stem from inefficient rights allocations due to politics and power within the firm. The difference between internal and external contracts is the subject of another future study.

A key contribution of our research is in articulating the role of formal contracts in the organization of activities within firms. We propose that formal contracting within firms is an alternative mechanism beyond organization structure, process documents, and informal agreements by explicitly addressing transactions between units within the firm. Formal contracts can be beneficial in providing clarity and credibility to the exchange, even when decision making is centralized. Formal contracts are used across all organizational structure types – centralized, international, and divisionalised structures (Magelssen 2021). For firms with a centralized structure, the formal contracts are between the parent and the subsidiaries. Formal contracts are a participatory mechanism whereby the units negotiate terms and discuss and resolve potential issues before entering into the transaction. As such, formal contracts serve as an ex-ante coordination device that can reduce the potential for ex-post conflict by establishing a mutual understanding of the units' rights. Having a formal contract can also limit the use and organizational costs of commanding authority. Intervention by top managers may be viewed poorly if the top manager goes against the contract terms and the rights of the units involved.

Many interesting research questions emerge from this study. First, the characteristics and types of formal contracts used within firms are theoretically and empirically interesting. This research raises questions for the theory of the firm and the contractibility of internal transactions. Since the transactions

within firm boundaries are likely different from transactions outside of firm boundaries, studying these differences and differences in the negotiated contract terms, characteristics, and contract types may provide valuable insight into the boundaries and the nature of the firm. Second, we view formal contracts as complementary to other organizational design mechanisms. Future research that studies how aspects of organizational design influence the use of formal contracts in ways that markets cannot duplicate can augment our understanding of the differences between firms and markets. Third, research examining how external factors, such as legal, societal, or cultural differences affect the use and design of internal contracts and how these external factors interplay with the internal factors explored in this work would be valuable to researchers and practitioners. Since legally distinct units have greater responsibilities to external stakeholders, we expect external factors to be particularly salient for formal contracts between legally distinct units within the firm. In contrast, firms are likely to have more discretion in designing contracts between non-legally distinct units.

Finally, examining the relationship between firm strategy and internal contracting can be a fruitful line of enquiry. For example, questions that explore whether firms create internal contracts for strategic purposes such as spin-offs, tax avoidance, or power distribution and the performance consequences of internal contracting can all enrich our understanding of internal transaction governance. Thus, we hope that the propositions developed herein will provide a foundation for research on formal contracts within firms and stimulate productive research on firm strategy and firm boundaries in the process.

References

Aghion P, Bloom N, Van Reenen J (2014) Incomplete contracts and the internal organization of firms. *J. Law, Econ. Organ.* 30(1):i37–i63.

Aghion P, Tirole J (1994) The management of innovation. *Q. J. Econ.* 109(4):1185–1209.

Aghion P, Tirole J (1995) Some implications of growth for organizational form and ownership structure. *Eur. Econ. Rev.* 39(3–4):440–455.

Aghion P, Tirole J (1997) Formal and Real Authority in Organizations. *J. Polit. Econ.* 105(1):1–29.

Alchian AA (1989) Property rights. *Invis. Hand*. (Springer), 232–238.

Alchian AA, Demsetz H (1972) Production , Information Costs , and Economic Organization. *Am. Econ. Rev.* 62(5):777–795.

Alchian AA, Demsetz H (1975) Production, Information Costs, and Economic Organization. *IEEE Eng. Manag. Rev.* 3(2):21–41.

Argyres N, Mayer KJ (2007) Contract design as a firm capability: An integration of learning and transaction cost perspectives. *Acad. Manag. Rev.* 32(4):1060–1077.

Ayotte K, Hansmann H (2012) Legal Entities as Transferable Bundles of Contracts. *Mich. Law Rev.* 111.

Baiman S, Fischer P, Rajan M V, Saouma R (2007) Resource allocation auctions within firms. *J. Account. Res.* 45(5):915–946.

Baker G, Gibbons R, Murphy KJ (1999) Informal authority in organizations. *J. Law, Econ. Organ.* 15(1):56–73.

Baker G, Gibbons R, Murphy KJ (2001) Bringing the Market Inside the Firm? *Am. Econ. Rev.* 91(2):212–218.

Baker G, Gibbons R, Murphy KJ (2002) Relational Contracts and the Theory of the Firm. *Q. J. Econ.* 117(1):39–84.

Baker G, Gibbons R, Murphy KJ (2011) Relational adaptation. *Unpubl. manuscript, USC Marshall*.

Baldwin CY (2008) Where do transactions come from? Modularity, transactions, and the boundaries of firms. *Ind. Corp. Chang.* 17(1):155–195.

Barzel Y (1997) *Economic analysis of property rights* (Cambridge University Press).

Beshears J, Gino F (2015) Leaders as decision architects. *Harv. Bus. Rev.*:https://hbr.org/2015/05/leaders-as-decision-archit.

Bethel JE, Liebeskind JP (1998) Diversification and the legal organization of the firm. *Organ. Sci.* 9(1):49–67.

Blader S, Gartenberg C, Henderson R, Prat A (2015) The real effects of relational contracts. *Am. Econ. Rev.* 105(5):452–456.

Brickley JA, Smith CW, Zimmerman JL (1996) *Organizational architecture: A managerial economics approach* (Irwin).

Bryan G, Karlan D, Nelson S (2010) Commitment Devices. *Annu. Rev. Econom.* 2(1):671–698.

Carson SJ, Madhok A, Wu T, Carson SJ, Tao W (2006) Uncertainty, opportunism, and governance: The effects of volatility and ambiguity on formal and relational contracting. *Acad. Manag. J.* 49(5):1058–1077.

Castañer X, Ketokivi M (2018) Toward a theory of organizational integration. *Organ. Des.* 40:53–80.

Caves RE (1980) Industrial organization, corporate strategy and structure. *Readings Account. Manag. Control*. (Springer, Boston, MA), 335–370.

Chandler AD (1990) *Strategy and structure: Chapters in the history of the industrial enterprise* (MIT Press).

Coase RH (1937) The nature of the firm. *Economica* 4(16):386–405.

Demsetz H (1967) Toward a theory of property rights. *Am. Econ. Rev.* 57(2):157–168.

Dessein W (2002) Authority and communication in organizations. *Rev. Econ. Stud.* 69(4):811–838.

Dobrajska M, Billinger S, Karim S (2015) Delegation within hierarchies: How information processing and knowledge characteristics influence the allocation of formal and real decision authority. *Organ. Sci.* 26(3):687–704.

Douglas W, Shanks C (1929) Insulation from liability through subsidiary corporations. *Yale Law J.* 39(2):193–218.
Eccles RG, White HC (1988) Price and authority in inter-profit center transactions. *Am. J. Sociol.* 94:S17–S51.
Eisenhardt KM (1989) Agency theory: An assessment and review. *Acad. Manag. Rev.* 14(1):57–74.
Elfenbein DW, Lerner J (2003) Ownership and Control Rights in Internet Portal Alliances, 1995-1999. *RAND J. Econ.* 34(2):356.
Exley CL, Naecker JRK (2017) Observability increases the demand for commitment devices. *Manage. Sci.* 63(10):3262–3267.
EY (2013) Navigating the choppy waters of international tax 2013 global transfer pricing survey. *https://www.ey.com/Publication/vwLUAssets/EY-2013_Global_Transfer_Pricing_Survey/$FILE/EY-%0D2013-GTP-Survey.pdf*.
Fabrizio KR, Thomas LG (2012) The impact of local demand on innovation in a global industry. *Strateg. Manag. J.* 33(1):42–64.
Farrell J (1987) Information and the Coase theorem. *J. Econ. Perspect.* 1(2):113–129.
Fortune (2014) Fortune 500. *MoneyCNN* 8(1):1–27.
Foss K, Foss NJ, Nell PC (2012) MNC organizational form and subsidiary motivation problems: Controlling intervention hazards in the network MNC. *J. Int. Manag.* 18(3):247–259.
Foss NJ (2003) Selective intervention and internal hybrids: Interpreting and learning from the rise and decline of the Oticon spaghetti organization. *Organ. Sci.* 14(3):331–350.
Foss NJ, Laursen K, Pedersen T (2011) Linking customer interaction and innovation: The mediating role of new organizational practices. *Organ. Sci.* 22(4):980–999.
Garicano L (2000) Hierarchies and the Organization of Knowledge in Production. *J. Polit. Econ.* 108(5):874–904.
Ghoshal S, Bartlett CA (1990) The multinational corporation as an interorganizational network. *Acad. Manag. Rev.* 15(4):603–626.
Gibbons R (2020) Visible Hands: Governance of Value Creation—Within Firms and Beyond. *AEA Pap. Proc.* 110:172–176.
Gibbons R, Henderson R (2012) Relational contracts and organizational capabilities. *Organ. Sci.* 23(5):1350–1364.
Gil R, Marion J (2013) Self-enforcing agreements and relational contracting: Evidence from California highway procurement. *J. Law, Econ. Organ.* 29(2):239–277.
Gil R, Zanarone G (2017) Formal and informal contracting: Theory and evidence. *Annu. Rev. Law Soc. Sci.* 13(1):141–159.
Gil R, Zanarone G (2018) On the determinants and consequences of informal contracting. *J. Econ. Manag. Strateg.* 27(4):726–741.
Grossman SJ, Hart O (1987) Vertical integration and the distribution of property rights. *Econ. Policy Theory Pract.* (Springer), 504–548.
Grossman SJ, Hart OD (1986a) The costs and benefits of ownership: A theory of vertical and lateral integration. *J. Polit. Econ.* 94(4):691–719.
Grossman SJ, Hart OD (1986b) The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration. *J. Polit. Econ.* 94(4):691–719.
Gulati R, Singh H (1998) The architecture of cooperation: Managing coordination costs and appropriation concerns in strategic alliances. *Adm. Sci. Q.*:781–814.
Hadfield GK, Bozovic I (2016) Scaffolding: Using formal contracts to support informal relations in support of innovation. *Wis. L. Rev.*:981.
Halac M (2012) Relational Contracts and the Value of Relationships. *Am. Econ. Rev.* 102(2):750–779.
Hart O (1995) Corporate governance: some theory and implications. *Econ. J.* 105(430):678–689.
Hart O (2008) Economica Coase lecture: Reference points and the theory of the firm. *Economica* 75(299):404–411.
Hart O, Moore J (1990) Property Rights and the Nature of the Firm. *J. Polit. Econ.* 98(6):1119–1158.

Hart O, Moore J (1999) Foundations of incomplete contracts. *Rev. Econ. Stud.* 66(1):115–138.
Helper S, Henderson R (2014) Management practices, relational contracts, and the decline of General Motors. *J. Econ. Perspect.* 28(1):49–72.
Hennart JF (1993) Explaining the swollen middle: Why most transactions are a mix of "market" and "hierarchy." *Organ. Sci.* 4(4):529–547.
Hölmstrom B (1979) Moral hazard and observability. *Bell J. Econ.*:74–91.
Holmström B, Tirole J (1991) Transfer pricing and organizational form. *J. Law, Econ. Organ.* 7(2):201–228.
Holmstrom BR, Tirole J (1989) The theory of the firm. *Handb. Ind. Organ.* 1:61–133.
Hu S, He Z, Blettner DP, Bettis RA (2017) Conflict inside and outside: Social comparisons and attention shifts in multidivisional firms. *Strateg. Manag. J.* 38(7):1435–1454.
Iacobucci EM, Triantis GG (2007) Economic and legal boundaries of firms. *Va. Law Rev.*:515–570.
IRS (2006) *IRS Accepts Settlement Offer in Largest Transfer Pricing Dispute*
Jacobides MG, Winter SG (2005) The co-evolution of capabilities and transaction costs: Explaining the institutional structure of production. *Strateg. Manag. J.* 26(5):395–413.
Jensen MC, Meckling WH (1976) Theory of the Firm: Managerial. *J. financ. econ.* 3:305–360.
Jensen MC, Meckling WH (1979) Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Econ. Soc. institutions*. (Springer, Boston, MA), 163–231.
Jensen MC, Meckling WH (1995) Specific and general knowledge, and organizational structure. *J. Appl. Corp. Financ.* 8(2):4–18.
Klein B (1996) Why Hold-ups Occur: The Self-Enforcing Range of Contractual Relationships. *Econ. Inq.* XXXIV(July):444–463.
Klein B, Leffler KB (1981) The role of market forces in assuring contractual performance. *J. Polit. Econ.* 89(4):259–278.
Kornhauser LA, MacLeod WB (2010) Contracts between legal persons. *Natl. Bur. Econ. Res.* (No. w16049):918–957.
Kretschmer T, Puranam P (2008) Integration through incentives within differentiated organizations. *Organ. Sci.* 19(6):860–875.
Lazzarini SG, Miller GJ, Zenger TR (2008) Dealing with the paradox of embeddedness: The role of contracts and trust in facilitating movement out of committed relationships. *Organ. Sci.* 19(5):709–728.
Leavitt HJ (2005) *Top down: Why hierarchies are here to stay and how to manage them more effectively* (Harvard Business Press).
Leiponen A (2008) Control of intellectual assets in client relationships: implications for innovation. *Strateg. Manag. J.* 29(13):1371–1394.
Lerner J, Merges RP (2003) The Control of Technology Alliances: An Empirical Analysis of the Biotechnology Industry. *J. Ind. Econ.* 46(2):125–156.
Levin J (2003) Relational incentive contracts. *Am. Econ. Rev.* 93(3):835–857.
Libecap GD (1993) *Contracting for property rights* (Cambridge University Press).
Macaulay S (1963) Non-contractual relations in business: A preliminary study. *Am. Sociol. Rev.*:55–67.
Macleod WB (2007) Reputations , Relationships , and Contract Enforcement. *J. Econ. Lit.* 45(3):595–628.
Macleod WB, Malcomson JM (1989) Implicit Contracts , Incentive Compatibility, and Involuntary Unemployment. *Econom. J. Econ. Soc.* 57(2):447–480.
Macleod WB, Malcomson JM (1993) Investments , Holdup, and the Form of Market Contracts. *Am. Econ. Rev.* 83(4):811–837.
Macneil IR (1980) Economic analysis of contractual relations: Its shortfalls and the need for a rich classificatory apparatus. *Nw. UL Rev.* 75:1018.
Magelssen C (2020) Allocation of property rights and technological innovation within firms. *Strateg. Manag. J.* 41(4):758–787.
Magelssen C (2021) *Inside the MNE: The Structure of Ownership*

Makadok R, Coff R (2009) Both market and hierarchy: An incentive-system theory of hybrid governance forms. *Acad. Manag. Rev.* 34(2):297–319.
Malcomson JM (1997) Contracts , Hold-Up , and Labor Markets. *J. Econ. Lit.* 35(4):1916–1957.
Malmgren HB (1961) Information, expectations and the theory of the firm. *Q. J. Econ.* 75(3):399–421.
March JG, Simon HA (1958) *Organizations.* (John Wiley & Sons, Ltd, New York).
Markovits D, Rauterberg G (2018) *Contracts: Law, Theory, and Practice* (Foundation Press).
Mayer KJ, Argyres NS (2004) Learning to contract: Evidence from the personal computer industry. *Organ. Sci.* 15(4):394–410.
Mayer KJ, Nickerson JA, Owan H (2004) Are supply and plant inspections complements or substitutes? A strategic and operational assessment of inspection practices in biotechnology. *Manage. Sci.* 50(8):1064–1081.
Merges RP (2005) A transactional view of property rights. *Berkeley Tech. LJ* 20:1477.
Naylor J, Lewis M (1997) Internal alliances: Using joint ventures in a diversified company. *Long Range Plann.* 30(5):678–688.
Nickerson JA, Zenger TR (2008) Envy, comparison costs, and the economic theory of the firm. *Strateg. Manag. J.* 29(13):1429–1449.
OECD (2015) *Public comments received on Transfer Pricing Guidelines of the BEPS Action Plan* (OECD Publishing, Paris).
Ostrom E (2000) Private and common property rights. *Encycl. law Econ.* (Edward Elgar Publishing Limited).
Ostrom E (2003) How types of goods and property rights jointly affect collective action. *J. Theor. Polit.* 15(3):239–270.
Oswald SL, Jahera JS (1991) The influence of ownership on performance: An empirical study. *Strateg. Manag. J.* 12(4):321–326.
Piskorski M, Spadini A (2007) Procter & Gamble: Organization 2005 (A). *Harvard Bus. Rev. Case* (707519).
Poppo L (1995) Influence activities and strategic coordination: Two distinctions of internal and external markets. *Manage. Sci.* 41(12):1845–1859.
Rauterberg G (2016) Contracting within the firm. *Work. Pap.* Retrieved https://web.law.columbia.edu/sites/default/files/microsites/law-economics-studies/20151117_gabriel_rauterberg_contracting_within_the_firm.pdf.
Ring PS, Van de Ven AH (1992) Structuring cooperative relationships between organizations. *Strateg. Manag. J.* 13(7):483–498.
Roberts J (2007) *The Modern Firm* (Oxford University Press New York, New York).
Ryall MD, Sampson RC (2003) Do Prior Alliances Influence Contract Structure? *Financ. Res. Policy Work. Pap. Ser.*:206–216.
Ryall MD, Sampson RC (2009) Formal contracts in the presence of relational enforcement mechanisms: Evidence from technology development projects. *Manage. Sci.* 55(6):906–925.
Schepker DJ, Oh WY, Martynov A, Poppo L (2014) The Many Futures of Contracts: Moving Beyond Structure and Safeguarding to Coordination and Adaptation. *J. Manage.* 40(1):193–225.
Scott AJ (2009) World Development Report 2009: reshaping economic geography.
Segal I, Whinston MD (2013) Property Rights. *Handb. Organ. Econ.* (Princeton University Press), 100–158.
Shelanski HA (2004) Transaction-level determinants of transfer-pricing policy: evidence from the high-technology sector. *Ind. Corp. Chang.* 13(6):953–966.
Simon HA (1951) A Formal Theory of the Employment Relationship Author (s): Herbert A . Simon Published by : The Econometric Society Stable URL : http://www.jstor.org/stable/1906815. *Econom. Soc.* 19(3):293–305.
Simon HA (1991) Organizations and Markets. *J. Econ. Perspect.* 5(2):25–44.
Squire R (2011) Strategic Libility in the Corporate Group. *Univ. Chicago Law Rev.*:605–669.
Stein JC (1997) Internal capital markets and the competition for corporate resources. *J. Finance*

52(1):111–133.
Stinchcombe AL (1985) Contracts as Hierarchical Documents. Stinchcombe AL, Heimer C, eds. *Organ. Theory Proj. Manag.* (Norwegian University Press, Bergen, Norway), 121–171.
Takeishi A (2001) Bridging inter-and intra-firm boundaries: management of supplier involvement in automobile product development. *Strateg. Manag. J.* 22(5):403–433.
Tsai W (2002) Social structure of "coopetition" within a multiunit organization: Coordination, competition, and intraorganizational knowledge sharing. *Organ. Sci.* 13(2):179–190.
Vanneste BS, Puranam P (2010) Repeated interactions and contractual detail: Identifying the learning effect. *Organ. Sci.* 21(1):186–201.
Walker G, Poppo L (1991) Profit centers, single-source suppliers, and transaction costs. *Adm. Sci. Q.*:66–87.
Weber L, Mayer K (2014) Transaction cost economics and the cognitive perspective: Investigating the sources and governance of interpretive uncertainty. *Acad. Manag. Rev.* 39(3):344–363.
Weber M (2009) *The theory of social and economic organization* (Simon and Schuster).
Williamson OE (1975) *Markets and hierarchies: analysis and antitrust implications* (The Free Press, New York).
Williamson OE (1985) *Economic Institutions of Capitalism* (The Free Press, New York).
Williamson OE (1991) Comparative Economic Organization: The Analysis of Discrete Structural Alternatives. *Adm. Sci. Q.* 36(2):269.
Williamson OE (1996) *The mechanisms of governance* (Oxford University Press).
Zenger TR (2002) Crafting internal hybrids: Complementarities, common change initiatives, and the team-based organization. *Int. J. Econ. Bus.* 9(1):79–95.
Zenger TR, Hesterly WS (1997) The disaggregation of corporations: Selective intervention, high-powered incentives, and molecular units. *Organ. Sci.* 8(3):209–222.

FIGURE 1

Continuum of Formalization of Intra-firm Agreements

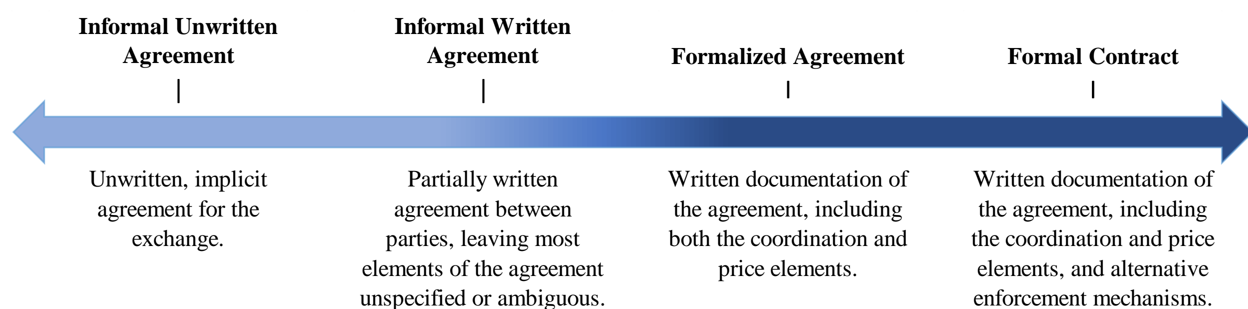

TABLE 1

Comparison of Research on Governance Mechanisms used for Internal and External Transactions

	Formal Contracts	**Informal Agreements**
External	- Allow parties to clarify objectives, roles, and responsibilities in the exchange (Argyres and Mayer 2007, Mayer and Argyres 2004). - Legal enforcement used as a means of last resort (Macaulay 1963); contracts may be unenforceable (Gil and Zanarone 2017, Ryall and Sampson 2003). - Facilitate coordination and adaptation (Mayer and Argyres 2004, Ryall and Sampson 2009, Vanneste and Puranam 2010).	- Rely on values and agreed-upon processes for governance (Macneil 1980). - Self-enforcing via reputational capital, visibility, strong organizational culture, frequency (Baker et al. 2002, Halac 2012, Klein 1996, Macleod 2007). - Implicit allocation of property rights based on an understanding between units, norms, or customs in rights allocations (Libecap 1993).
Internal	- Reduce internal politics by shifting dispute resolution away from managers to insulated adjudicators (Rauterberg 2016). - Used as communication and commitment devices to allocate property rights within the firm.	- Can lack clarity or shared understanding of tasks for the transaction and relational knowledge (Gibbons 2020, Gibbons and Henderson 2012). - Can lack credibility, driven by factors such as the inability to punish, fluctuating returns, and payoff schemes (Halac 2012, Macleod 2007, Macleod and Malcomson 1989).

FIGURE 2
Continuum of Transactional Relationships

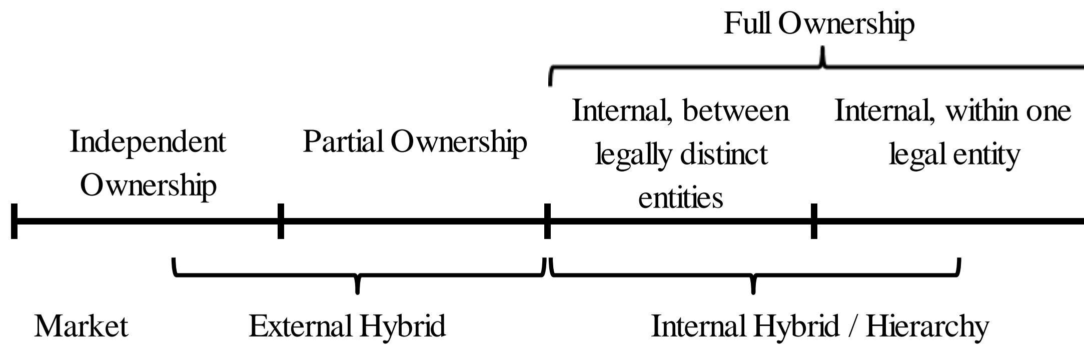

TABLE 2

Enforceability and Logic of Enforceability of Formal Contracts

	Internal Transactions between Units	
	Non-Legally Distinct Entities	**Legally Distinct Entities**
Enforceability	Top management	Third parties
Logic of Enforcement	Strategic importance to firm - Top management may selectively intervene in contract.	Intent of parties - Enhances the credibility of contract rights. - Binds the range actions that top managers can take in intervening in the transaction.

Appendix

DISTRIBUTOR CONTRACT

This DISTRIBUTOR AGREEMENT ("Agreement") is effective as of [EFFECTIVE DATE] (the "Effective Date") by and between:

[UNIT A], a corporation organized and existing under the laws of [US STATE] U.S.A., with its principal place of business located at [ADDRESS]. ("Manufacturer")

and

[UNIT B], a company organized and existing under the laws of Japan, with its principal place of business located at [ADDRESS] ("Distributor").

RECITALS

A. Manufacturer is in the business of developing, designing, and distributing certain [TYPES OF PRODUCTS] (defined herein as the "Products").

B. Manufacturer desires to appoint Distributor as its distributor in the Territory (as defined herein) for the purpose of marketing and distributing the Products within the Territory, and Distributor desires to accept such appointment, on all the terms and conditions set forth below.

C. This agreement supersedes and replaces all earlier agreements made between the parties prior to the Effective Date.

AGREEMENT

THEREFORE, in consideration of the mutual terms and conditions hereinafter set forth, Manufacturer and Distributor agree as follows:

Article 1 - Definitions

For purposes of this Agreement, the following terms shall have the meanings described below:

1.1 "Confidential Information" shall mean all data and information of a confidential nature, including know-how and trade secrets, relating to the business, affairs, products and other goods or services of the respective parties to this Agreement. Confidential Information may be communicated orally, visually, in writing or in any other recorded or tangible form. Data and information shall be considered to be Confidential Information (a) if the disclosing party has marked them as such, (b) if the disclosing party, orally or in writing, has advised the receiving party of their confidential nature, or (c) if, due to their character or nature, a reasonable person in a like position and under like circumstances as

the receiving party would treat them as secret and confidential. This definition of Confidential Information shall not apply, or shall cease to apply, to data and information supplied by the disclosing party that (i) was in the receiving party's possession prior to receipt from the other party as shown by files existing at the time of disclosure; (ii) has come into the public domain other than through a breach of confidentiality by the receiving party; (iii) was developed independently by employees of the receiving party or by persons who have not had access to the disclosing party's Confidential Information; (iv) was or is lawfully obtained, directly or indirectly, by the receiving party from a third party under no obligation of confidentiality; or (v) is required to be disclosed pursuant to any statutory or regulatory provision or court order, *provided, however,* that the receiving party provides notice thereof to the disclosing party, together with the statutory or regulatory provision, or court order, on which such disclosure is based, as soon as practicable prior to such disclosure, so that the disclosing party has the opportunity to obtain a protective order or to take such other protective measures as it may deem necessary with respect to such information. The receiving party shall have the burden of establishing any of the foregoing exceptions.

1.2 "Distribution Rights" shall mean those rights granted to Distributor, or indirectly to a Subdistributor, pursuant to Section 2.1 hereof.

1.3 "Purchase Order Agreement" shall mean the written agreement pursuant to which an end-user customer obtains from Distributor the non-exclusive right to use the Products for its own internal use.

1.4 "Intellectual Property Rights" shall mean and include all patents, copyrights, data bases, designs, drawings, mask works, Marks and other proprietary rights, or applications, which Manufacturer may at any time own, adopt, license, use, or register with respect to the Products or its business.

1.5 "Marks" shall mean and include trademarks, service marks, trade names, brand names and trade dress and which are used on or in connection with any of the Products and/or on any brochures, manuals, promotional materials or other documents related to the Products.

1.6 "Person" shall mean and include any individual, corporation, trust, estate, partnership, joint venture, company, association, league, governmental bureau or agency, or any other natural or legal entity, regardless of the type or nature thereof.

1.7 "Products" shall mean and refer to, individually and/or collectively, the [TYPES OF PRODUCTS] for the [TYPE OF] market, spare parts, the documentation and Upgrades pursuant to related customer support agreements which are generally commercially supplied by Manufacturer from time to time during the term of this Agreement, or which are offered by Manufacturer.

1.8 "Subdistributor" shall mean any Person with whom Distributor enters into a Subdistributor Agreement.

1.9 "Subdistributor Agreement" shall mean a written agreement, which has been approved by Manufacturer, pursuant to which Distributor grants Distribution Rights to a Subdistributor in accordance with the terms of Section 2.1(b) hereof.

1.10 "Territory" shall mean Japan.

1.11 "Update" shall mean any change, upgrade, enhancement, revision, or modification with respect to the Products.

Article 2 - Appointment of Distributor

2.1 Appointment. Subject to the terms and conditions set forth in this Agreement, Manufacturer hereby appoints Distributor as its non-exclusive distributor of the Products in the Territory, and Distributor hereby accepts such appointment. Such appointment authorizes Distributor to:

a) sell the Products and to enter into Purchase Order Agreements with end-users of the Products in the Territory;

(b) enter into Subdistributor Agreements with Subdistributors, subject to the prior written approval of Manufacturer;

(c) enter into maintenance contracts with customers in the Territory; and

(d) perform consulting and training services for customers in the Territory.

2.2 Relationship Between Parties. Distributor shall act as an independent contractor under the terms of this Agreement, and not as a legal representative of Manufacturer for any purpose whatsoever. Nothing in this Agreement shall be construed (a) to give either party the power to direct or control the daily activities of the other party, or (b) to constitute the parties as employer and employee, seller and buyer, licensor and licensee, franchisor and franchisee, partners, joint venturers, co-owners or otherwise as participants in a joint undertaking. Except as expressly provided for in this Agreement, Distributor has no right or authority to (a) enter into any contract, or to assume or create any obligation of any kind, express or implied, on behalf of Manufacturer, or (b) waive any right, interest or claim that Manufacturer may have against any other Person. Distributor and its employees are not, and shall not act as employees of Manufacturer under the meaning or application of any employment or related laws, or under any other laws or regulations which would impute any obligations or liability to Manufacturer by reason of any employment relationship.

Article 3 - Duties of Distributor

3.1 General Conduct. Distributor shall use its best efforts to promote the sales, marketing and distribution of the Products in the Territory, and to enter into contracts in connection therewith. Distributor shall not engage in any illegal or unethical business practices.

3.2 Marketing. In furtherance of its best efforts obligation under Section 3.1 hereof, Distributor shall engage in the active and regular advertising and promotion of the Products within the Territory, including but not limited to (a) organizing and participating in trade shows, exhibitions, seminars, and user group meetings, (b) maintaining press relations, and (c) performing sales presentations

and Product demonstrations. Distributor shall, at its own expense, prepare promotional and marketing materials which are appropriate for the effective marketing of the Products within the Territory; provided, however, that all such promotional and marketing materials shall be subject to Manufacturer's review and approval prior to commercial release or use by Distributor.

3.3 Purchase Order Agreement. Distributor shall cause each customer to which any of the Products are sublicensed to execute a Purchase Order Agreement in a form which has been approved by Manufacturer. Manufacturer shall approve Distributor's Purchase Order Agreement, provided that such agreement contains substantially similar terms as those contained in the Manufacturer's Purchase Order Agreement. Distributor shall provide Manufacturer with copies of each Purchase Order Agreement in accordance with those policies communicated by Manufacturer to Distributor from time to time.

3.4 Professional Services. Distributor shall provide, in its own name and for its own account, adequate professional services for the Products, in particular training and consulting services to end-users. The professional services shall include, but not be limited to, providing project-oriented advice and information regarding the selection, maintenance, application, installation and debugging of the Products. All services that Distributor provides to customer under this article 3.4 shall conform to Manufacturer's quality standards, which Manufacturer shall make known to Distributor from time to time.

3.5 Local Technical Support. To supplement the worldwide support effort for the Products, Manufacturer may require Distributor to provide local technical support for the account of Manufacturer. Such technical support shall include the provision of advice and information regarding the Products in accordance with the worldwide standard support agreement.

3.6 Warranties. Distributor shall provide, in its own name and for its own account, warranty work for the Products. Distributor shall not make representations or warranties with respect to the Products greater in scope or duration than those generally made by Manufacturer in the Territory, except where required by local law.

Article 4 - Obligations of Manufacturer

4.1 Marketing Materials. Manufacturer shall, at no cost, provide Distributor with a reasonable quantity of marketing and promotional materials to assist Distributor in its marketing activities hereunder.

4.2 Warranty Materials. Manufacturer shall, at no cost, provide Distributor with a reasonable quantity of spare parts and equipment to assist Distributor in its warranty work as described in Article 3.6.

4.3 Technical Support Services. Manufacturer shall be responsible for the performance of the technical support services under the maintenance contracts sold by Distributor to its customers. Accordingly, Manufacturer, or one of its affiliates, shall maintain a technical support center with Internet and telephone access adequate to service the needs of Distributor's customers.

4.4 Inventory. Manufacturer shall supply inventory; however, Distributor may maintain some inventory on hand as needed for purposes of sales and marketing of products.

Article 5 - Orders and Shipments

5.1 Orders. All orders for the Products submitted by Distributor to Manufacturer shall specify the type and quantity of Products and the requested delivery date. Each order shall be governed by and deemed to incorporate all the terms and conditions of this Agreement. Manufacturer shall, at its sole discretion, accept or reject the order without undue delay. Manufacturer shall use commercially reasonable efforts to ship the Products by the delivery date requested by Distributor and shall indemnify and hold Distributor harmless for any damages incurred by Distributor as a result of delays in shipment that are caused by Manufacturer.

5.2 Shipment. All shipments hereunder shall be made in Manufacturer's standard shipping packages. Except as otherwise agreed by the parties, all Products supplied by Manufacturer shall be delivered FOB Distributor's place of business, or such other destination within the Territory specified by Distributor in the applicable order. Risk of loss for the Products and documentation relating to the Products, shall be transferred from Manufacturer to Distributor at Distributor's place of business or such other agreed destination within the Territory. Manufacturer shall be responsible for all actions necessary to obtain clearance to import the Products into the Territory; provided that Distributor shall pay Manufacturer for costs and expenses incurred in connection therewith, including shipping, freight, insurance, taxes, duty and other related shipping charges as determined by Manufacturer.

5.3 Inspection of Products. Upon delivery of the Products, Distributor shall inspect the Products and notify Manufacturer of any damage, tampering, shortage or other discrepancy between the Products and shipping documents.

Article 6 - Prices and Payments

6.1 Prices. Distributor shall pay to Manufacturer a purchase price for each Product equal to the actual price collected by Distributor from the first sale of the Product to a non-Affiliate in the Territory, less a Discount as shown in Exhibit A. Distributor and Manufacturer will review the performance of Distributor on a periodic basis, and will negotiate to amend this discount if circumstances warrant in accordance with the intercompany pricing study attached as Exhibit B as amended or superseded from time to time.

6.2 Payment. Distributor shall pay the full amount of the purchase price as set forth in Section 6.1 hereof within fifteen calendar days after Distributor receives the amount from the customer. Each payment by Distributor hereunder shall be made in Japanese Yen, unless otherwise directed by Manufacturer. In the event that Distributor fails to make any payment hereunder on the due date therefor, such overdue amount shall bear interest, from the due date to the date such amount is paid in full, at a rate of one and one-half percent per month or portion thereof by which such payment is overdue, or the maximum rate permitted by law, whichever is less.

6.3 Distributor Compensation for Services.

(a) Unless excepted in this subsection (c), Distributor shall be responsible for costs incurred for Professional Services and Local Technical Support related to the Products.

(b) Distributor shall retain [PERCENTAGE] percent of net revenue from the Professional Services, described in Article 3.4.

(c) Manufacturer shall pay Distributor for local technical support, described in Article 3.5, a fee equal to the Local Technical Support Costs plus [PERCENTAGE] of the Local Technical Support Costs related to Manufacturer's products in the Territory not sold by Distributor.

6.4 Local Technical Support Costs. For purpose of this Agreement, "Local Technical Support Costs" shall mean all (a) direct costs, as accounted for by Distributor under U.S. GAAP, which are incurred in connection with performing local technical support, and (b) indirect costs allocable to local technical support as calculated by a methodology agreed to by the parties. "Local Technical Support Costs" do not include direct or indirect costs attributable to the marketing effort of the Products, as described in Article 3.2; the performance of professional services, as described in Article 3.4.

6.5 Withholding. In the event that any amount payable by Distributor hereunder is subject to any withholding or other, similar tax under the laws of the Territory, Distributor shall provide Manufacturer, on a timely basis, with copies of official tax receipts or other evidence of payment of such withholding taxes sufficient to permit Manufacturer to support a claim for a credit for such taxes against Manufacturer's United States income tax liability. To the extent that any withholding tax is payable under applicable law in the Territory, Distributor shall provide Manufacturer with any and all assistance reasonably requested by Manufacturer to obtain the benefits of any applicable tax treaty.

Article 7 - Product Warranty; Limitation of Liability

7.1 DURING THE WARRANTY PERIODS APPLICABLE TO EACH RESPECTIVE PRODUCT, MANUFACTURER WARRANTS THAT THE PRODUCTS SHALL BE FREE FROM MATERIAL DEFECTS IN DESIGN, MATERIALS AND WORKMANSHIP, AND THAT THEY SHALL PERFORM IN SUBSTANTIAL CONFORMANCE WITH MANUFACTURER'S PUBLISHED PRODUCT SPECIFICATIONS IN EFFECT ON THE DATE OF DELIVERY. THIS IS THE SOLE WARRANTY MADE BY MANUFACTURER WITH RESPECT TO THE PRODUCTS, AND MANUFACTURER EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES OF ANY KIND WHATSOEVER, WHETHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, MANUFACTURER DOES NOT WARRANT THAT THE PRODUCTS WILL PERFORM IN AN UNINTERRUPTED OR ERROR-FREE MANNER. EXCEPT AS MAY OTHERWISE BE STATED IN THIS SECTION 7.1, THE PRODUCTS,

RELATED DOCUMENTATION, AND ANY CONFIDENTIAL INFORMATION ARE PROVIDED TO DISTRIBUTOR "AS IS."

7.2 UPON DISTRIBUTOR'S GIVING PROMPT WRITTEN NOTICE OF ANY FAILURE OF THE PRODUCTS TO CONFORM TO THE WARRANTY DESCRIBED IN SECTION 7.1, MANUFACTURER SHALL EITHER REPAIR OR REPLACE THE DEFECTIVE PRODUCT, OR PROVIDE DISTRIBUTOR WITH A REFUND OF THE PRODUCT PURCHASE PRICE, IN MANUFACTURER'S SOLE DISCRETION. THE FOREGOING IS DISTRIBUTOR'S SOLE AND EXCLUSIVE REMEDY FOR BREACH OF MANUFACTURER'S PRODUCT WARRANTY UNDER THIS AGREEMENT.

7.3 NEITHER PARTY SHALL BE LIABLE TO THE OTHER PARTY FOR ANY INDIRECT, INCIDENTAL, CONSEQUENTIAL, SPECIAL, OR PUNITIVE DAMAGES OF ANY KIND OR NATURE FOR ANY REASON WHATSOEVER, INCLUDING, WITHOUT LIMITATION, THE BREACH OF THIS AGREEMENT OR ANY TERMINATION OF THIS AGREEMENT, WHETHER SUCH LIABILITY IS ASSERTED ON THE BASIS OF CONTRACT, TORT (INCLUDING NEGLIGENCE OR STRICT LIABILITY), OR OTHERWISE, EVEN IF THE OTHER PARTY HAS BEEN PLACED ON NOTICE OF THE POSSIBILITY OF SUCH LOSS OR DAMAGES. IN NO EVENT SHALL MANUFACTURER'S LIABILITY FOR DAMAGES ARISING FROM OR IN CONNECTION WITH THIS AGREEMENT EXCEED THE AGGREGATE AMOUNT OF COMPENSATION WHICH MANUFACTURER HAS RECEIVED FROM DISTRIBUTOR PURSUANT TO THIS AGREEMENT.

Article 8 - Cooperation With Manufacturer

8.1 Record Keeping. At all times during the term of this Agreement, Distributor shall maintain full, complete and accurate books of account and records with regard to its activities under this Agreement, including updating Manufacturer's internal tracking system for the distribution of the Products in accordance with Manufacturer's instructions. Upon reasonable notice, Distributor shall consent to Manufacturer reviewing, during normal business hours, Distributor's books, records and systems in order that Manufacturer, at its expense, may verify compliance by Distributor with its obligations under this Agreement.

8.2 Additional Information. Distributor shall maintain at its facility a list of names and addresses of all customers in the Territory and the amount of sales to each, and shall provide Manufacturer with such list upon Manufacturer's request. Distributor shall maintain its records in such a manner that permits Manufacturer to differentiate between costs associated with sales of Products (including Updates), costs associated with performing professional services, and costs associated with providing local technical support. Distributor shall also maintain copies of Purchase Order Agreements and supporting documentation for at least five (5) years after termination or expiration of this Agreement. All other records and accounts relating to the sale of the Products shall be maintained by Distributor for at least three (3) years after termination or expiration of this Agreement. From time to time during the term of this Agreement, Manufacturer may request that Distributor maintain and provide Manufacturer with (a) a summary of competitors' product introductions and activities in the Territory, and (b) sales forecasts with respect to the Products for the next following six calendar months. Distributor shall provide

such information to Manufacturer as and when requested. Distributor shall also immediately report to Manufacturer all claimed or suspected Product defects.

Article 9 - Intellectual Property Rights

9.1 Acknowledgment. Distributor acknowledges Manufacturer's exclusive right, title and interest in and to any and all Intellectual Property Rights embodied in or pertaining to the Products and that, except as specified in this Agreement, Distributor shall acquire no rights whatsoever in or to any of such Intellectual Property Rights.

9.2 Right to Use Marks. Distributor is hereby granted the non-exclusive right to use, in the Territory during the term of this Agreement, those Marks of Manufacturer, solely in connection with the marketing and distribution of the Products. Distributor hereby expressly acknowledges Manufacturer's exclusive ownership of said Marks and their value to Manufacturer, both in the Territory and worldwide. Distributor agrees that, in the performance of its obligations contained herein, all of the Marks used by Distributor in connection with the Products shall at all times be correctly referred to and designated by Distributor in the manner prescribed by Manufacturer and the Products shall be identified as the Products of Manufacturer which are offered for sale by Distributor. Distributor further agrees not to register the Marks or to use or register any name or mark confusingly similar to the Marks without the specific authorization of Manufacturer. Distributor shall discontinue using all of Marks immediately upon expiration or termination of this Agreement except in connection with the sale of any inventory remaining as of the effective date of termination in accordance with the terms and subject to the conditions contained in Section 13.5 hereof.

9.3 Notices, Marks, Legends and Name. Distributor shall not alter, remove, cover, or add to, in any manner whatsoever, any patent notice, copyright notice, Mark, serial number, model number, brand name or legend that Manufacturer may attach or affix to the Products.

9.4 Assistance. Distributor shall promptly notify Manufacturer (a) of any claims or objections that its use of the Intellectual Property Rights in connection with the distribution of the Products may or will infringe the Intellectual Property Rights of any other Person, and (b) of any and all infringements, imitations, illegal use, or misuse, by any Person, of Manufacturer's Intellectual Property Rights which come to its attention; provided, however, that Distributor shall not take any legal action relating to the protection of Manufacturer's Intellectual Property Rights without the prior written approval of Manufacturer; and provided further that Distributor shall render Manufacturer, at Manufacturer's expense, all reasonable assistance in connection with any matter pertaining to the protection of its Intellectual Property Rights.

Article 10 - Non-Disclosure of Confidential Information

10.1 Non-Disclosure Obligations. During the term of this Agreement, each party may disclose certain Confidential Information to the other party, solely to permit the other party to perform its

obligations under this Agreement. The receiving party shall refrain from using or otherwise exploiting any and all Confidential Information received by the disclosing party for any purposes or activities other than those specifically authorized in this Agreement. The receiving party shall not disclose such Confidential Information to any third party without the prior written authorization of the disclosing party, which authorization may be withheld in the disclosing party's sole discretion. The receiving party shall keep such Confidential Information secret during the term of this Agreement and after termination thereof and shall implement effective security procedures in order to avoid disclosure or misappropriation of such Confidential Information. The receiving party shall immediately notify the disclosing party of any unauthorized disclosure or use of any Confidential Information that comes to the receiving party's attention, and shall take all action that the disclosing party reasonably requests to prevent any further unauthorized use or disclosure thereof.

10.2 Ownership of Materials. Distributor expressly acknowledges and agrees that, except as specifically provided in this Agreement, at no time shall it acquire or retain, or appropriate for its own use, any right, title or interest in or to any Confidential Information. All files, lists, records, documents, drawings, specifications and computer programs which incorporate, embody or refer to all or a portion of the Confidential Information shall remain the sole property of Manufacturer. Such materials shall be promptly returned (a) upon Manufacturer's reasonable request, or (b) in accordance with Section 13.2 of this Agreement upon termination of this Agreement, whichever is earlier.

Article 11 - Indemnification

11.1 Indemnification Generally. Distributor shall indemnify and hold Manufacturer harmless from and against all claims, suits, demands, actions and proceedings, judgments, penalties, damages, costs and expenses (including reasonable legal fees and costs), losses or liabilities (collectively, "Damages") which may arise or result from (a) the marketing or distribution by Distributor of the Products, and (b) any distribution of the Products outside the Territory, and (c) a breach by Distributor of any representation, warranty or other provision of this Agreement. Manufacturer shall indemnify and hold Distributor harmless from and against all Damages which may arise or result from (a) a breach by Manufacturer of any representation, warranty or other provision of this Agreement, (b) such other warranty as Distributor may be unable to disclaim as a matter of local law, and (c) product liability or other claims howsoever arising out of the Distributor's exercise of its rights and performance of its obligations under this Agreement, other than those caused by Distributor's negligence.

11.2 Indemnification for Infringement. Manufacturer shall defend at its own expense any action brought against Distributor, to the extent that such action is based on a claim that the use or supply of any Product in the Territory infringes the Intellectual Property Rights of any other Person and shall pay any costs and damages finally awarded against Distributor in any such action which are attributable to any such claim. Manufacturer's obligation under the preceding sentence is subject to the conditions that (a) Distributor shall promptly have notified Manufacturer in writing of any such claim, and (b) Manufacturer shall have had sole control of such defense and all negotiations for any settlement or compromise. Should any Product become, or in Manufacturer's opinion be likely to become, the subject of any infringement claim, Manufacturer shall have the right to instruct Distributor to refrain from

supplying the Product or to take such other steps as Manufacturer may consider appropriate in order to limit its liability exposure.

11.3 Limitations. Manufacturer shall have no liability to Distributor under this Article 11 with respect to any claim of infringement which is based upon or results from (a) the combination of any Product with any machine, device, firmware or software not furnished by Manufacturer, (b) any modification of any Product by a Person other than Manufacturer, or (c) Distributor's failure to install Product changes or Updates as instructed by Manufacturer.

Article 12 - Term and Termination

12.1 Term and Renewal. This Agreement shall commence on the Effective Date and shall continue in full force and effect until the end of the first fiscal year thereafter, unless earlier terminated as provided in Sections 12.2 or 12.3 below. After this initial term, the Agreement shall be automatically renewed for one year periods, unless either party gives notice of non-renewal at least ninety (90) days prior to the renewal date.

12.2 Termination for Cause. This Agreement may be terminated by written notice of termination, effective on the date such notice is received, after the occurrence of any of the following events:

(a) By the non-breaching party, upon any breach of the other party's obligations under Articles 9 or 10 of this Agreement;

(b) By either party, to the extent permitted by law, upon the insolvency or bankruptcy of the other party, the inability of the other party to pay its debts as they fall due or upon the appointment of a trustee or receiver or the equivalent for the other party, or upon the institution of proceedings relating to dissolution, liquidation, winding up, bankruptcy, insolvency or the relief of creditors, if such proceedings are not terminated or discharged within thirty days;

(c) By the affected party, upon the enactment of a law, decree, or regulation within the Territory or any portion thereof which would impair or restrict (a) either party's right to terminate or elect not to renew this Agreement as herein provided; (b) Manufacturer's right, title or interest in and to the Products or the Intellectual Property Rights therein; or (c) Manufacturer's right to receive the prices and fees as set forth in this Agreement;

(d) Upon any final decision by Manufacturer or one of its affiliates to liquidate or dissolve Manufacturer or otherwise end Manufacturer's existence; or

(e) Upon a violation by either party or their respective obligations under the United States Foreign Corrupt Practices Act or the United States Export Administration Regulations.

12.3 Termination For Change of Control. In the event of a "Change of Control" (as defined below) of Distributor, Distributor immediately shall provide written notice of such event to Manufacturer, and Manufacturer shall have the right, at its sole discretion, immediately to terminate this Agreement by providing Distributor written notice given within sixty (60) days after its receipt of such notification, or at any time prior to such notification if Manufacturer independently learns of such event, with such termination to be effective immediately upon the receipt by Distributor of such notice. For purposes hereof, a "Change of Control" of Distributor means: (i) the consolidation or merger of Distributor with any other legal entity, in which all voting securities of Distributor outstanding immediately prior thereto represent less than fifty percent (50%) of the voting power of Distributor or the surviving entity outstanding immediately thereafter; or (ii) the sale or disposition by Distributor (in one transaction or a series of transactions) of all or substantially all of its assets.

12.4 Termination Without Cause. This Agreement may also be terminated with or without cause, for any reason or no reason whatsoever, upon ninety (90) days prior written notice given by either party to the other at any time after the expiration of the initial term of one (1) year from the Effective Date hereof.

12.5 Cure Period. If either party shall commit any breach or be in default of its duties and obligations under this Agreement, other than those set forth in Section 12.2, the non-breaching party shall give to the breaching party written notice of such breach or default and shall request that such breach or default be cured. If the breaching party shall fail to cure such breach or default within thirty (30) days of the date of the notice of breach or default, the non-breaching party may terminate this Agreement immediately by giving written notice of termination to the breaching party.

Article 13 - Rights And Obligations Upon Termination

13.1 Cessation of Rights. Upon termination of this Agreement for any reason whatsoever, all rights and obligations of the parties hereunder shall cease; provided, however, that termination of this Agreement shall not relieve the parties hereto of any obligations accrued prior to said termination, including but in no way limited to the parties' obligations to make payments in accordance with the terms hereof.

13.2 Return of Products and Sales Materials. Upon termination, Distributor shall, at Manufacturer's option and in Manufacturer's sole discretion, promptly destroy, return to Manufacturer, or turn over to a third party designated by Manufacturer, all marketing materials and Confidential Information remaining in Distributor's possession, whether in written, recorded or other tangible form.

13.3 Survival of Non-Disclosure Obligation. Notwithstanding the termination of this Agreement, Distributor shall continue to abide by the terms of its non-disclosure obligations with respect to Confidential Information under Article 10 of this Agreement.

13.4 Waiver of Termination Compensation. TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, NEITHER MANUFACTURER NOR DISTRIBUTOR SHALL, BY REASON OF THE EXPIRATION, NON-RENEWAL OR TERMINATION OF THIS AGREEMENT FOR ANY REASON, BE LIABLE TO THE OTHER FOR COMPENSATION OR REIMBURSEMENT OF DAMAGES ON ACCOUNT OF ANY LOSS OF PRESENT OR PROSPECTIVE PROFITS ON SALES OR ANTICIPATED SALES, ON ACCOUNT OF ANY EXPENDITURES, INVESTMENTS, INVENTORY, LEASES OR OTHER COMMITMENTS MADE IN CONNECTION WITH THIS AGREEMENT, IN ANTICIPATION OF CONTINUED PERFORMANCE HEREUNDER, OR IN CONNECTION WITH THE ESTABLISHMENT, DEVELOPMENT OR MAINTENANCE OF MANUFACTURER'S OR DISTRIBUTOR'S BUSINESS OR GOODWILL.

13.5 Repurchase of Inventory. Upon termination of this Agreement for any reason, Manufacturer shall either repurchase Distributor's existing inventory of Products for the amount actually paid by Distributor for such Products, or authorize Distributor to sell the existing inventory in accordance with the terms of this Agreement, in Manufacturer's sole discretion.

13.6 Assignment of Distributor Agreements. Upon termination of this Agreement for any reason whatsoever, Distributor shall assign to Manufacturer all Subdistributor Agreements and maintenance contracts with customers within the Territory and shall cooperate with Manufacturer to execute any documents necessary or appropriate to effect such assignment.

Article 14 - Compliance with Applicable Laws

14.1 General Compliance. Distributor shall at all times strictly comply with all applicable laws, rules, regulations and governmental orders, now or hereafter in effect, relating to its performance of this Agreement. Distributor further agrees to make, obtain, and maintain in force at all times during the term of this Agreement, all filings, registrations, reports, licenses, permits and authorizations (collectively "Authorizations") required under applicable law, regulation or order in order for Distributor to perform its obligations under this Agreement. Manufacturer shall provide Distributor with such assistance as Distributor may reasonably request in making or obtaining any such Authorizations.

14.2 U.S. Foreign Corrupt Practices Act. Without limiting the generality of Section 14.1 hereof, Distributor represents and warrants that it shall not engage in any action that would constitute a violation of the United States Foreign Corrupt Practices Act, as amended, 15 U.S.C. Section 78dd-1 et seq. ("FCPA"). Distributor and its employees and agents shall not offer, pay, promise to pay, give or promise to give any money or anything of value, whether directly or through third parties, to any government official, political party, political official, candidate for political office or to any person, while knowing or having reason to know that all or a portion of such money or thing of value will be offered, paid, given or promised, directly or indirectly, for purposes of influencing any act or decision of the foregoing or inducing the foregoing to use his, her or its influence with a government or instrumentality thereof to affect or influence any act or

decision of such government or instrumentality. Distributor represents and warrants that none of its officers, directors, or employees is an official or employee of a government or of any governmental agency or instrumentality and that Distributor shall not employ any such individual during the term of this Agreement. Distributor further represents and warrants that it, and each of its agents, officers, directors or employees engaging in acts pursuant to this Agreement, have read the FCPA and is aware of the duties, liabilities and obligations set forth in the FCPA.

14.3 U.S. Export Controls. Without limiting the generality of Section 14.1 hereof, Distributor hereby acknowledges and agrees that the Products, and all of the Confidential Information, are subject to export controls under the laws and regulations of the United States, including the Export Administration Regulations, 15 C.F.R. Parts 730-774. In the exercise of its rights, and the performance of its obligations under this Agreement, Distributor shall comply strictly with all such United States export control laws and regulations applicable to the Products, and the Confidential Information, and shall not export, reexport, transfer, divert or disclose any such Products or Confidential Information, or any direct product thereof, to any destination or any national or resident thereof, or to any other natural or legal entity restricted or prohibited under U.S. export controls, except in accordance with all U.S. export controls. Distributor's obligations under this Section 14.3 shall survive the termination of this Agreement for any reason whatsoever.

Article 15 - General Provisions

15.1 Waivers. The waiver by either party of a breach or default in any of the provisions of this Agreement by the other party shall not be construed as a waiver of any succeeding breach of the same or other provisions; nor shall any delay or omission on the part of either party to exercise or avail itself of any right, power or privilege that it has or may have hereunder operate as a waiver of any breach or default by the other party.

15.2 Entire Agreement and Amendments. This Agreement, the purchase orders accepted by Manufacturer hereunder, and the attachments hereto, constitute the entire agreement between the parties with respect to the subject matter hereof and supersede all prior agreements between the parties, whether written or oral, relating to the same subject matter. No modification, amendments or supplements to this Agreement shall be effective for any purpose unless in writing and signed by each party. Approvals or consents hereunder of a party shall also be in writing.

15.3 Assignments. Neither party shall have the right or power to assign any of its rights, or delegate the performance of any of its duties, under this Agreement without the prior written authorization of the other party, except that Manufacturer may assign or otherwise transfer any of its rights, and/or delegate the performance of any of its duties hereunder to any existing or newly formed entity or association controlled by, controlling or under common control with Manufacturer. For the purposes of this definition, the term "control" shall mean the ownership of at least 50% of the voting rights in any entity or association.

15.4 Force Majeure. Neither party shall be liable to the other party for any delay or omission in the performance of any obligation under this Agreement, other than the obligation to pay monies, where the delay or omission is due to any cause or condition beyond the reasonable control of the party obliged to perform (except to the extent that the non-performing party has expressly or impliedly assumed the risk of such cause or condition pursuant to the terms of this Agreement), including but not limited to, strikes or other labor difficulties, acts of God, acts of government (in particular with respect to the refusal to issue necessary import or export licenses), war, riots, embargoes, or inability to obtain supplies ("Force Majeure"). If Force Majeure prevents or delays the performance by a party of any obligation under this Agreement, then the party claiming Force Majeure shall promptly notify the other party thereof in writing.

15.5 Notices. All notices, reports, invoices and other communications between the parties shall be in writing and sent by facsimile, by registered or certified, first-class airmail, return receipt requested and postage prepaid, or by overnight courier. All such communications shall be sent to a party at the address shown at the beginning of this Agreement or to such other address of which the receiving party has given prior notice to the sending party. All such communications shall be deemed to have been received (a) if sent by facsimile, with electronic confirmation of receipt, twenty four hours after such transmission or the time of actual receipt, whichever is earlier, (b) if sent by registered first class airmail, ten (10) calendar days after dispatch, or (c) if sent by overnight courier, two (2) calendar days after the date of dispatch.

Article 16 - Enforcement of Agreement

16.1 Governing Law and Forum. This Agreement shall be governed by, and interpreted in accordance with, the laws of the State of [U.S.A. STATE], U.S.A., excluding its conflicts of laws rules. The U.N. Convention on the International Sale of Goods shall not apply to this Agreement. Any dispute between the parties relating to the validity, performance, interpretation or construction of this Agreement shall be submitted to the courts located within the State of [U.S.A. STATE], U.S.A., which courts shall have exclusive jurisdiction to adjudicate any disputes arising out of or in connection with this Agreement. Both parties specifically consent to the exercise of personal jurisdiction by such courts. Notwithstanding the provisions of this Section 16.1, Manufacturer shall have the right to seek relief in any court of competent jurisdiction to prevent or enjoin any unauthorized use, disclosure, misappropriation or infringement of any of its Intellectual Property Rights or Confidential Information.

16.2 Legal Expenses. The prevailing party in any legal proceeding brought by one party against the other party and arising out of or in connection with this Agreement shall be entitled to recover its legal expenses, including court costs and reasonable attorneys' fees.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized representatives as of the date first written above.

[UNIT A]		[UNIT B]	
[SIGNED BELOW BY UNIT A EXECUTIVE]		[SIGNED BELOW BY UNIT B EXECUTIVE]	
By:	______________________________	By:	______________________________
Name:	______________________________	Name:	______________________________
Title:	______________________________	Title:	______________________________

EXHIBIT A

PURCHASE ORDER AGREEMENT

EXHIBIT B

Intercompany Pricing Agreement

EXHIBIT C

MARKS