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Contracting capability: A distillation of co-operative principles from business history to guide present day restructuring

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CONTRACTING CAPABILITY: A DISTILLATE OF CO-OPERATIVE PRINCIPLES FROM BUSINESS HISTORY TO GUIDE PRESENT DAY RESTRUCTURING

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CONTRACTING CAPABILITY: A DISTILLATE OF CO-OPERATIVE PRINCIPLES FROM BUSINESS HISTORY TO GUIDE PRESENT DAY RESTRUCTURING

The article re-examines the present day restructuring of large-scale enterprise in the West from a new perspective derived from business history, transaction cost economics, and game theory. Creating inter-organizational networks and modifying intra-firm arrangements to give human capital more scope of exercising autonomous judgement involves formulating co-operative contracts. The idea of "contracting capability" is developed to show how economic actors in the past established presence in an incipient bargaining flow, forged bonds of trust with other parties, and designed contracts that could accommodate sequential modification. By exercising strong leadership and communicating skills, they forged an initial agreement that became a foundation for sustaining a long-term, multiple-period relationship. Knowledge of history can help today's business leaders to identify the principles of contracting and to develop guidelines for evoking and preserving co-operative conduct.

Management theorists are reassessing hierarchical organizations as many large-scale enterprises in the West spin off sub-units into quasi-independent entities and flatten their administrative pyramids to mobilize market incentives and promote efficiency [Kanter, 1990, Beer, Eisenstat, & Spector, 1990]. Fundamentally, the reformation of hierarchy is a response to the inability of internal communication channels to sustain co-ordination in the face of growing environmental turbulence. Systems are being overloaded by the effects of rapid technical change and an accelerating pace of new product development. At the same time, the globalization of markets has induced growth patterns that further strain organizational capabilities, increase risk, and call for resource sets that firms cannot mobilize independently.

Current interest in improved information handling technology as a possible solution to these organizational challenges may obscure the need to make fundamental changes in systems design and communication methods. Building inter-organizational networks and allowing human capital more scope for autonomous judgement signal a marked departure from hierarchical authority relations because these new arrangements involve formulating co-operative contracts. Co-operation demands specific types of behaviour, distinct incentives, and special communication skills.

Recent studies of failures to sustain co-operative ventures indicate that executives accustomed to working in hierarchies may be unfamiliar with contracting principles [Miles & Snow, 1992; Lei & Slocum, 1992, Parkhe, 1994]. In essence, executives need to recognize the salient importance of communication in initiating and preserving co-operative contracting inside the firm and beyond its boundary. History reveals that inter-organizational networks and participative incentives are not new. Armed with some knowledge of the past, managers will have a broader perspective from which to consider present day institutional innovation.

This paper enlists economic theory and examples from business history to identify the principles of contracting and to develop guidelines for evoking co-operative conduct. The discussion is divided into two sections. The first identifies the attributes of 'contracting capability' and explores the challenges involved in forging an initial agreement. The second illustrates methods that have been used to sustain co-operative links over a multiple time period horizon. The overall aim is to encourage decision-makers to think of business relationships in contractual terms.

I

Williamson's pioneering work on transaction costs rightly pushes informational concerns to the center of analysis [1975; 1985]. His basic behavioral assumptions are that economic actors are subject to bounded rationality (they intend to act rationally but lack both complete information and absolute computational accuracy) and they have a tendency to behave opportunistically (they pursue self-interest with guile). Thus, transactions are made in the midst of uncertainty and asymmetric information. A principal hires an agent, who has information that is not available to the former, to act on the principal's behalf, but the principal cannot directly observe whether the agent acts in the principal's best interests. As a result, contracting involves costs that arise from finding a trustworthy agent, negotiating an agreement, monitoring the agent's performance, and enforcing the contract. While reporting conventions and the law economize on transaction costs, these expenses cannot be reduced to zero. Further, there may be ex post contingencies that could not be foreseen before the initial agreement was concluded, and costs may arise from making sequential adjustments.

Contracts are therefore seldom just one-off deals. Rather, they represent an ongoing relationship that sustains serial modification and collaborative decision-making. Nor is it useful to take a rigid legal view of contracting, for agreements involve explicit provisions as well as implicitly understood adjustment parameters. Agreements between economic actors residing within the firm and beyond its boundary unfold in a multiple time period context which generates positive learning effects that are vital in sustaining co-operative `gaming'.

Indeed, game theory reveals that escape from the `Prisoner's Dilemma' depends upon co-operation [Kreps, 1990; Axelrod, 1974].[1] Players will adopt a defection strategy in a single period game -even though this course produces a lower payoff than co-operation- simply because they do not trust each other. In a repeated game, conditional co-operation (a player will co-operate when the other player does so in the previous game but will systematically defect if the other deviates from co-

[1] Two prisoners are suspected of a major crime, but the police have only enough evidence to win a conviction on a minor charge. If neither prisoner confesses, both receive a light sentence on the lesser charge (co-operation). If one implicates the other in the major crime, (and the other does not confess) he goes free and the other gets a heavy sentence (unilateral defection). If both implicate each other they get moderate sentence (mutual defection).

operation) may become the Nash equilibrium if both parties envision an indefinite time horizon and if the discount rate is large enough to prevent defection [but see Kreps, Milgrom, Roberts, & Wilsons, 1982]. What is left unexplored, however, is how participants forge an initial co-operative contract and signal that they observe an indefinite time horizon. Escape from the Prisoner's Dilemma depends upon players' `contracting capabilities'

Contracting capability I define as ingenuity in arranging co-operative agreements that reduce uncertainty arising from asymmetrical information. It is underpinned by economic actors' ability to communicate in both implicit and explicit ways. Contracting capability reflects their capacity to establish an initial presence in an incipient bargaining flow, to forge with others the bonds of trust on which to base an initial agreement, and to display creativity in designing the actual contract. In a multiple time period context, contracting capability also encompasses the ability to win a reputation as a reliable contractor. Reputation is crucial to contracting because it represents a valuable intangible asset, built up by long-term investment, that plays a central role in determining future business development and thus deters short-term opportunism.

Contracting capability complements what Chandler [1990] calls `corporate capability', or the firm's power to co-ordinate action. Distinctions between co-ordination and co-operation and between corporate and contracting capabilities are relevant to today's restructuring. Viewing economic relations as co-operative and contractual provides a fresh perspective from which to approach `empowering' human capital and forming inter-organizational links. Indeed, our understanding of why hierarchies developed is based on insights concerning how new formal structures and systems lowered the cost of transacting internally rather than through markets, but this Chandlerian framework does not show explicitly how co-operative contracts between principals and agents underpinned these organizational powers. In contrast, Barnard [1958: 184] argues that intra-firm interaction unfolds as economic actors "submit to the necessities of co-operative systems" rather than complying with powers of fiat as references to hierarchical co-ordination imply. Co-operation also supports inter-firm contracts like those embodied in networks, strategic alliances, and other intermediate transacting modes (non-market and non-hierarchical frameworks). From this angle, the firm can be seen as a nexus of contracts, some of which unfold within its boundary and others that extend beyond its frontier. Contracting capability underpins all these relations.

Establishing presence in an incipient bargaining flow and building trust -the first two attributes of contracting capability- depends upon how effectively an economic actor can communicate with potential partners. There are, of course, different forms of communication, and the extent of inter-personal knowledge and the physical proximity of potential contractors will determine both the degree of prevailing informational asymmetry and the type of communication methods employed. Information can be transmitted explicitly by direct face to face conversation, but implicit emissions may have greater power. Informal signals conveyed by how a party behaves -actions speak louder than words- reveal underlying motives. Common affiliations between prospective contractors can reveal the existence of shared experience and common values. Reputation is a vital form of implicit communication because it conveys assurances to other economic actors who do not have first hand knowledge about an entrepreneur.

Within a single period game, however, contractors do not have reputations. Similarly, fledgling entrepreneurs seeking to make their first agreement face this large large hurdle in establishing presence, but they can overcome it in one of three ways. First, they can invest time in making themselves visible to potential contractors by generating inter-personal knowledge and building trust. Second, they can offer very favorable terms to prospective contractors, but this tactic may convey adverse signals and may undermine the principle of contract design by making it likely that excessively large sequential adjustments will have to be made in the future. Alternatively, newcomers may be able to save time costs by winning reputation-by-association with a known contractor. History provides examples of how new entrepreneurs pursued these courses using different types of communication channels.

The closely knit communities of 19th century Britain provided highly localized conduits and contracting fora, such as commercial, social, and cultural venues, through which parties won presence and built trust at low cost [Boyce, 1995; Cassis, 1985; Kirby, 1993]. Social and business links were interwoven and whom one knew in one context determined the scope of their contracting options. Ethnic, religious, and educational ties conveyed assurances of trust by implicitly indicating that an untested entrepreneur observed recognized codes of behavior. Above all, family ties provided the strongest bond, and many newcomers forged initial contracts by using family position to gain reputation by association and signal deterrence.

While contracting fora and communication lines have changed over time as new forms of social links displaced some traditional forms, they still serve introductory and screening services. Occupational, professional, and political affiliations are more prominent today as the influence of the church and other institutions erode along with their accompanying values. Education and professional background provide substitute signals for the observance of specific codes of conduct, especially where fiduciary responsibilities and sanctions exist, or where training imparts ethical standards. Family ties provide less support to those wishing to build reputation by association as the size of the relevant contracting arena grows and as society becomes more mobile. However, entrepreneurs who run spun-off units that contract with both former employers and outsiders can win shared reputation and implicitly convey assurances of trust based on their former employer's renown. Retaining this link serves an as endorsement to other contractors. To the extent that traditional cultural forces decline and are not replaced by equally effective conduits, contracting costs must rise. New forms of electronic communication lower some expenses and quicken the speed of transmissions: -an important consideration for the conditional co-operation gaming strategy. However, with the possible exception of using video telephones, communication via the new technology is no substitute for face to face encounter which, by conveying a fuller spectrum of implicit signals, enhances what Williamson calls the transparency of contractors' behavior. Social change and the erosion of traditional institutions are making `contracting culture' and communication infrastructures more relationship-specific. As contractors are compelled to build their own `contracting cultures', they incur higher time costs and greater investment in communication skills.

Intermediary figures can help fledgling entrepreneurs forge an initial contract with participants with whom the newcomer has not established direct bonds of trust [Casson, 1991]. History highlights the central role of reputation in attracting potential contractors to investment bankers and contact men to broker deals [Boyce, 1995; Carosso, 1989; O'Hagan, 1929]. These figures formed direct contractual links between principals and agents by providing references or screening services, and by staking their own reputations. Alternatively, they established indirect links by contracting with each party separately and assuming the position of middleman within an incipient stream of transactions. Intermediaries also created behavioral rules for these relationships. Today, consultants, bankers, and venture capitalists can provide intermediary services.

The ability of entrepreneurs to win their own presence also depends on possession of assets that are attractive to prospective partners. Newcomers are often disadvantaged by having little capital and a limited set of economic resources upon which to arrange deals. As a result, they must rely on `pure' entrepreneurial assets, such as desirable temperament, skills, contacts, and a track record won in a related employment context. These figures may have direct control over few physical resources, but indirectly they may be able to arrange deals based on a wider range of assets to which they have private access through established ties. These links may also generate reputation by association.

Social assets, such as titles or public office, may confer reputation and create contracting options. One example of an entrepreneur who used contacts provided by his social assets was Rolls, the upper class son who teamed up with engineer Royce, to sell high quality automobiles [Jeremy, 1984-6]. Social assets may represent investment in reputation which, though relevant mainly in non-business contexts, still signals deterrence to opportunism. Yet, social assets are often subject to dual interpretation: in some circles they may reflect position or permanence, while in others they may imply ostentation or a lack of discipline. Indeed, a modest lifestyle was attractive in British non-conformist groups because it indicated both observance of desired values and focused energy. Different cultures recognize various forms of social assets, and the nature of these resources have changed over time. Within today's global context, businessmen need to learn about signaling devices available in various contexts, invest in appropriate assets, and develop the capacity to manage the resultant impressions creatively.

The third attribute of contracting capability, ingenuity in contract design, refers to how entrepreneurs configure three elements: the legal provisions of the agreement, monitoring mechanisms, and a supporting culture [Carlos & Nicholas 1990]. Each of these variables involves costs which vary in inter-related ways. Thus, elaborate monitoring machinery will impose heavy expenses which may be reduced if partners can rely on values to deter opportunism. Yet, building a relationship-specific culture involves time costs that may be mitigated by embedding precisely specified clauses in the legal contract. The overall balance between costs and benefits arising from relying to different degrees on each of these three elements depends on the state of reporting technology, the social context, and the legal environment. Contracting ingenuity reflects on how the elements are arranged to minimize costs and maximize benefits within specific environmental and relation-specific circumstances.

Thus, effective contract design involves far more than precisely specifying compliance parameters and adjudication processes. Excessive attention to these concerns may raise costs and detract from evoking a co-operative ethos that should permeate a long-term relationship and sustain sequential modification. Preoccupation with legal minutae may signal distrust or suspicion. Specifying conditions is a necessary part of designing a contract, but the primary aim is to build a framework that includes both `hard' concrete inducements and `soft' culture based incentives.

The clauses of the legal agreement can be arranged to mobilize `hard' incentives by compelling a party to undertake transaction- specific investment. This tactic forces them to signal that they observe a multiple time period horizon and have a low propensity toward opportunism. Those who withhold such assurances are suspect. This form of bond, and others like financial commitment or socially significant guarantees, provide the means for one party to punish the other in case of unilateral defection. Having the means to inflict penalties directly on a transgressor is important because legal recourse cannot always ensure full compliance and because litigation is costly and time consuming. Reciprocal bonding cements a bilateral guarantee and, depending on the form of investment, may create subsidiary communication lines.

Combining formal monitoring mechanisms with subsidiary channels furnishes contractors with complementary communication lines. Participants can then use two or more streams of information to confirm impressions derived from a single source. When both parties have access to such communication lines, the transparency of their behaviour increases with positive results for a strategy of conditional co-operation. Triangulating these links with a conduit to the public arena will enhance visibility and provide deterrence. However, direct channels between principals and agents also support the underlying incentive structure.

Formal and informal links can mobilize `soft' culture-based incentives. In so doing, partners can arrange the payoff pattern to compel unfaithful parties to contend with self-imposed sanctions in conjunction with `hard' incentives created by the formal contract. Invoking cultural forces may involve marshalling recognized values or creating a relationship-specific context both of which set out rules and legitimize specific practices. Either course requires contractors to exhibit originality in manipulating value systems. When framing the initial agreement, partners need to install communication channels that will continuously reinforce the basis of trust, sustain mutual learning, and ensure that both parties grow together co-operatively in a multiple period context.

From a game theoretic perspective, the balance between the three components of a contract will shape the pay off pattern in its widest sense. The distribution of net returns should be such that long-term gains from co-operation exceed the returns from defection. Moreover, at the outset, partners should signal each other that they have the means to extend co-operation to subsidiary deals and that there is scope for generating a larger benefit stream over time. They should also recognize that they can both win reputational gains as reliable contractors and that these will enhance future contracting possibilities which in turn can be shared in reciprocal fashion. By shaping the discount rate in these ways partners will develop a long-term horizon.

The three principles of contract design are applicable to both inter- and intra-organizational agreements. The internal contracts discussed below relied to varying degrees on legal provisions, monitoring machinery, and cultural forces. In each instance, the mix complimented both the firm's strategic goal and cultural precedents recognized by the contractors involved.

Liverpool shipowners, Alfred Holt and Alfred Booth used the `improving' ethic of liberal non-conformism to legitimize highly personalized internal contracts (Falkus, 1990 & John, 1959]. Both men established compact working environments in which executives at all levels were visible and where close proximity facilitated inter-personal learning and informal monitoring. The provisions of the contract explicitly allowed for participative remuneration and implicitly included assurances that trusted figures could advance to full partnerships. Booth and Holt recruited generalists with similar backgrounds to facilitate the inculcation of firm traditions and devoted special personal attention to training. By the time managers became partners they were accustomed to consultative decision-making processes. These methods facilitated the delegation of tasks to managers posted overseas and smoothed inter-action between the U.K. partners who were given overlapping areas of responsibility to enhance the firms' responsiveness to rapidly changing business conditions.

Charles Schwabe manipulated payoff patterns in various ways to induce diverse constituents within Bethlehem Steel to maximize output and profit margins [Hessen, 1972]. He paid the sales force commissions based on the profit per ton, instead of the volume of steel sold, to discourage members from cutting prices to boost sales. For shopfloor workers he combined piece rate payment with bonuses for exceeding output targets. Supervisors shared in these bonuses and thus had an incentive to co-operate with workers in improving techniques. This incentive system employed elements of traditional payment schemes to invoke a measure of legitimacy while it redirected these precedents to encourage information sharing and create a team ethos. Schwabe's contract relied more on provisions that mobilized monetary incentives and culture, and less on monitoring mechanisms.

One of the pioneers of the modern hierarchy, Alfred Sloan, devised a contract based largely formal provisions and monitoring mechanisms [Johnson & Kaplan, 1987 and Tedlow, 1988]. He cleverly linked accounting systems, the multidivisional structure, and incentives. However, recognizing the limits of powers of fiat, Sloan communicated extensively with employees and employed "institutional advertizing" to evoke a co-operative response to the new M-form organization. {Marchand: 1989: 192-4}. Sloane's mix of contracting elements accommodated professional specialists and complemented GM's diversification strategy.

The specific configuration of each of these initial contracts was intended to minimize costs and maximize benefits in line with the types of constituents involved and the overall corporate goal. The designers treated each element -even culture- as a malleable component; these entrepreneurs modified existing cultural forces, and when these were inappropriate they created new social systems. In so doing, they demonstrated the importance of leadership and communication in designing contracts.

These two variables are also vital today as business leaders make profound changes to the configuration of intra-firm contracts. When hierarchies are flattened, the tier of principal-agent relationships decreases in height so that members' visibility and their proximity to each other both increase. These changes allow for more direct communication among parties at all levels and facilitate the creation of both co-operative cultures and self-monitoring employees. Executives can adjust the contractual mix to place greater emphasis on the cultural component and less on monitoring. Legal provisions tend to rely more on participative remuneration instead of payment according to position withing a hierarchy. In order to modify the mix in these ways, participants must invest more time and resources building contracting culture, stronger communication capabilities, and co-operative leadership skills. The resultant returns include lower monitoring expenses, more flexible pay structures, and more highly motivated employees.

Restructuring trends suggest that the firm will resemble a small core, consisting of long-term employees in whom corporate values are vested, surrounded by satellites which are contractually linked to the core. There are three threats to the core. First, these small organizations may develop in-grown cultures. This can be avoided by designing incentives to ensure that members remain receptive to outside impressions. Second, performance based pay structures can be used to encourage interaction across the firm's boundary, but may enable contractors to earn more than figures who had been their superiors in the hierarchy. The potentially adverse consequences of upsetting old remuneration schemes in this way can be avoided by including former superiors within the new framework and by arranging the payoff pattern for all parties to promote co-operation and a team ethos. Third, any lay-offs which accompany restructuring represent unilateral defection on the part of the employer. Surviving core members may respond by pursuing other employment or by creating asymmetric information flows within the organization to protect their positions. To prevent these reactions requires leadership and extensive communication. Management must break the contract `gracefully' to preserve its reputation. Resources allocated to compensating employees or assisting them in setting up an quasi-independent contractors who can sell their services back to the parent firm represent investment in future contracting possibilities within the core and with satellites.

The principles of contract design also apply to inter-firm contracts. Each of the historical figures discussed above created networks that provided their core organization with complementary resources or services. Holt's network included cargo agents Swire and Mansfield and shipbuilder J. Scott. The Booths were linked to Holt, a shipbuilder, and Liverpool merchants. In both cases, initial contracts were based on overlapping operating and investment ties, inter-personal knowledge enhanced by personnel transfers, and extensive communication. Schwabe's allies included suppliers, customers, and his previous employer who were bound by commercial interdependence and inter-personal knowledge. Sloan forged strong bonds with GM's dealers by direct communication and personal contact; this effective franchise-based intermediate mode gave GM a competitive advantage over Ford who was a poor communicator.

Today, firms create satellites by transforming existing commercial ties with outsiders into interdependent relationships or by spining-off and retaining contracting links with subordinate units. Visible affiliation with the core firm enables satellites to win shared reputations, but this is especially important in helping spun-off units to establish the presence needed to act as quasi-independent contractors. However, because satellites have a measure of autonomy to contract with the parent firm as well as outsiders, there is a danger that satellites may become detached from the core which will lose access to their expertise or that spun off units will divulge strategic intelligence to outsiders. To induce satellites to recognize long-term interdependence with the parent organization, a relationship-specific culture must be forged and the payoff pattern aligned to deter opportunism and generate joint gains. The benefits consist of more than monetary remuneration, they include scope for joint learning and exploiting progressively wider productive opportunities over time.

To summarize, overcoming the initial contracting hurdle demands of economic actors highly effective communication skills. Not only must they develop the capacity to make a wide range of implicit and explicit transmissions, they must learn to be receptive to an array of such impressions. While efficient contracts combine creatively focused cultural and monetary incentives, they are based fundamentally on trust. The latter feature is the product of effective leadership and communication, and it is the key to sustaining a multiple time period horizon.

II

The scope of contracting activities in a repeat gaming situation is potentially much greater than is the case in a single-period context because dependable contractors win favourable reputations and acquire more resources. Over time, a sound reputation helps to extend future contracting options by helping an entrepreneur to establish presence in progressively larger contracting arenas. Communication and learning support serial contracting and growth by expanding the range of co-operative conduct. Indeed, reputation is subject to `snowballing' effects as other dependable contractors will seek deals with figures who are recognized for being forthright. Entrepreneurs who transact together repeatedly establish a shared reputation and develop the capacity to radiate joint signals, the power of which exceeds the sum of their individual emissions. Such joint reputational advantages, which must be shielded from opportunists, provide an adhesive function. As time passes, entrepreneurs also accumulate more resources and thereby broaden their contracting options. The greater the size of an entrepreneur's resource set, the more attractive a potential partner they will become to other economic actors. The diversity of their assets will also expand the range of deals they can make. Agents with large reputations and resource sets will have advantages in forging new communication lines and the wider bonds of trust needed to transform bilateral agreements into multilateral networks.

History shows that the fundamental purpose of networks was to support mutual learning and communication which sustained sequential, adaptive decision-making. In essence, networks represented preferential communication lines based upon trust, reciprocity, and inter-personal or inter-organizational knowledge. More concretely, networks helped members to assemble sets of complementary assets, spread risk, and exchange intelligence about business opportunities that they could not exploit independently.

Over time, contractors who operate within networks must contend with the tensions that growth can create. They must preserve a balance between maintaining cohesion while sustaining a given pace of expansion [Penrose, 1959]. Unlike managers who seek to ensure administrative co-ordination using hierarchical structures, contractors rely on co-operative agreements to influence activities carried out by constituents who recognize some degree of interdependence but enjoy a measure of autonomy. The crux of the matter is whether network members can continue to co-operate and make sequential decisions in an adaptive way to sustain growth in the face of internal problems or external shocks created by the speed, extent, and direction of that growth. In game theory terms, the challenge is to ensure that mutual co-operation remains the equilibrium position for all players while endogenous and exogenous change causes the values within the payoff pattern to shift.

This task may become more difficult as entrepreneurs enlarge their networks because they may find that the stock of parties who can be trusted places a limit on growth. Indeed, Casson [1991: 144-6] argues that as networks grow the cost of employing moral sanctions alone to deter opportunism grows more rapidly than the cost of using external sanctions. This is intuitively appealing: shared values are recognized only within certain limits and the risk that an opportunist will intrude may increase with network size. Thus, the necessary exclusiveness of networks can restrict their capacity to expand. However, this proposition is based on the assumption that there is a limit to contracting capability. It is possible to derive guidelines from how co-operators avoided these problems in various historical contexts.

British shipowners extended their contracting frontier when it reached the limits of trust based on local links or family ties by using their increasingly diverse assets to `nest' contracts (as Tsebelis [1990] called the tactic) with partners from different contracting arenas. For example, when Furness set up a joint venture with Ronaldsons, he used overlapping financial and operating ties to act as `hard' incentives that could deter opportunism while hoping that communication and mutual advantage would in time invoke `soft' relationship-specific culture needed to create an enduring bond [Boyce, 1995]. He took the precaution of `triangulating' the agreement with a third party, so that two partners could inflict comprehensive punishment on an unfaithful third contractor. This multilateral contract also created complementary information flows that could be used for monitoring purposes.

Shipowners not only used the breadth of their business operations to provide deterrence, they also sought to contract in ways that harnessed a third dimension: depth. They did so by dealing with men who shared social and cultural affiliations, not only because these ties implicitly conveyed assurances, but also because such linkages could be used to destroy reputations in several contexts at once. Shipowners also used the threat of ostracizm, third party intervention, and public exposure of opportunists to sunder the complementarities between social and business pursuits that helped entrepreneurs to enter progressively larger contracting arenas [also see Cassis, 1985; Cain & Hopkins, 1986]. By combining elements of breadth and depth they sought to structure payoff patterns in ways that firmly planted contracts in a mutual co-operation equilibrium.

These `nesting' tactics gave shipowners the means to establish a type of a desirable reputation described by Buckley and Casson [1988], that for consistently being the last to abandon mutual forebearance and for always ruthlessly and visibily punishing those who abandon forebearance first. For example, when Ronaldsons miscalculated and invited a rival to enter the trilateral trade described above, Furness bankrupted them by calling bills running on the ship he had sold them and pirated their staff. Furness relied upon retaliatory capability mainly for deterrence and used it sparingly, but when he unleashed his power he did so visibly and crushed unfaithful partners to convey unequivocal signals to other constituents within his contracting arena.

Punishment is only a last resort: contractors try to strengthen their business relationships and grow together. Participants seek to maintain co-operative balance by investing to enlarge their own resource base and develop capabilities that expose wider growth inducing complementarities with their partners' assets. For example, Furness Withy and the Royal Mail Steam Packet Co. jointly formed a refrigerated service in the U.K.-Argentina trade in 1910 and in time shared assets in related fields such as agency work, ship repair, and insulation repair. Joint investment nested their contract; and as both parties continued to expand their capabilities and maintain co-operative balance, further ventures unfolded in serial fashion.

In contrast, a deterioration in one partner's position can create instability by changing values within the payoff matrix. Thus, Furness' link with Houlders was threatened by debt servicing problems which induced a group of Directors to try to sell the firm's Australian interests to the Federal Co. Another faction invited Furness to bid for the firm and he took up a controlling interest to preserve the relationship. Furness injected fresh capital and management to exploit the potential benefits arising from the mix of the two organizations' resources in the Argentinian trade. Thus, by reforming the relationship and strengthening an ally Furness restored the two firms' interpendence. Nor did he miss the chance to forge a link with Federal. Rather than alienate that company, he sold them Houlder's Australian interests and induced them to participate in the support operations that Furness Withy and the Royal Mail shared. In this way, he spun a wider web of interdependence. Today, contractors need to monitor the health of their allies, be prepared to assist them, and seek advantages that can be won by involving third parties.

The need to sustain inter-organizational networks by making reciprocal investment compelled some shipowners to diversify so widely or rapidly that their capacity to maintain cohesion was undermined. For example, in the 1920s Lord Kylsant failed to win a balance between allowing affiliates to develop their interests and preserving overall operating coherence within his Royal Mail group. Bounded rationality reduced the gains of co-operation while excessive debt restricted his freedom to manoeuvre, and the group collapsed in 1930 [Davies & Bourne, 1972]. In contrast, Furness Withy avoided such problems by using three separate holding companies as distinct contracting nodes. Each unit focused its contracting activities on a different type of specialized knowledge which they continuously developed. When a combination of internal opportunism and external shock, in the form of the impending collapse of the post-war boom, threatened one of these nodes, the group sold of its most vulnerable industrial units and preserved its co-operative reputation by controlling the resultant signals. The timing of the move was fortunitous, management avoided excessive debt and enhanced their flexibility by reforming contracting links with other suppliers.

In contrast to the potential problems of over-expansion, networks can become `in-grown' or fail to strengthen their knowledge and resource bases continuously. Preventing in-growth depends upon contractors' ability to balance the necessary exclusiveness of their network with openness to outside contracting options. For example, for thirty years Furness simultaneously developed ownership links with some shipyards and contracting channels with other independent shipbuilders in order to maintain access to a wide range of expertise. His letters reveal that he communicated extensively to preserve these relationships and to build wider complementarities [Boyce, 1995]. With access to data about subunits' costs and market prices, Furness was able to promote competitiveness and to gain economies from standardization.

Shipowners also prevented their enterprises from becoming in-grown by accommodating regular infusions of new constituents. Some of these newcomers had specialized knowledge that conferred upon them quasi-rent appropriating capabilities, but they were carefully enmeshed in incentive structures that owners controlled. By offering large monetary rewards and adjusting traditional precedents to mobilize soft incentives, shipowners harnessed for their own benefit the signaling power and independent contracting capabilities of these specialists. Nor did shipowners behave in short-sighted ways, such as reverting to explicit command, and thereby jeopardize benefits derived from the knowledge of these specialists to whom they delegated responsibility for managing subunits. Instead, owners preserved a creative co-operative tension based on respect, differences in knowledge, and common goals, while at the same time retaining control of their groups' contracting cultures.

Casson [1991] argues that the relationship between a firm's internal culture and the wider external contracting culture may have an important effect on the form of growth. He suggests that firms with `high trust' corporate cultures find it easier to form external networks because the strategies governing both types of contract are alike. He implies that co-operative skills and patterns of behaviour learned in one contracting context can be applied to another. However, it is possible to take this insight further. A co-operative reputation established in an internal contract can be radiated outwards to signal dependability and to smooth external dealing. Moreover, corporate culture has cognitive aspects that lower information handling expenses [Cremer, 1993], and these features may be replicated within an external contracting culture to reduce transaction costs and facilitate multilateral contracting. Finally, when it invokes `hard' monetary incentives, an internal culture can influence relations with outside constitutents. Canadian steel firm, DOFASCO Inc., has used its internal contract in this way.

The central support for DOFASCO's incentive structure is a profit sharing plan which has operated since the 1930s [Boyce, 1990]. This contract excludes the United Steel Workers Union and thus facilitates sequential adjustments, especially those induced by incremental technological improvements some of which the firm's bonus system draws from the shopfloor. The internal contract has helped DOFASCO to build reputation as a technical innovator, and it has also created monetary incentives that have attracted outside constituents to contract with the firm. The elimination of the strike threat has induced customers and suppliers to view the firm respectively as a dependable source of steel and a reliable outlet for inputs. Financial institutions attach a lower risk premium to the firm's debt. Prospective employees are attracted to the company providing it with a larger pool of talent from which to select new workers. Thus, DOFASCO's internal contract has not only sustained positive signals and generated co-operative skills, it has also created competitive advantages of association that have helped to extend the firm's contracting options. Managers today need to consider how they can align the incentives underlying their internal and external contracts in order to exert some influence over the broader contracting environment.

In a multiple time period context, expansion may encourage firms to enter new contracting arenas that have unfamiliar cultures. While this development may generate new opportunities it also poses major risks. In 1989, for example, DOFASCO encountered problems when it purchased the Algoma Steel Corporation. While a host of adverse environmental conditions made this an ill-timed acquisition, DOFASCO's basic mistake was to enter a different contracting culture without installing a supporting incentive structure. Algoma had a long tradition of militant unionism and endemic labour conflict which had been intensified by its status as one of the largest employers in an isolated community with few alternative employment opportunities and a vulnerable economic base. Recurring crises in the firm's performance did not spawn co-operation, but rather served to drive the firm down a time-path that entrenched adversarial labour relations. Moreover, Algoma's survival since the 1920s had depended largely on support from the government and a series of strong parent firms. This dependency relationship and hostile labour environment were unfamiliar to DOFASCO; indeed, what proved to be a prolonged strike took place at Algoma shortly after DOFASCO acquired the firm. As mounting losses threatened its own internal contract, DOFASCO took the dramatic step of writing off its entire investment in Algoma in 1992 to signal visibly a return to its previous contracting principles. By preserving its internal contract DOFASCO retained a foundation for restoring its reputation.

While DOFASCO's experience with Algoma reveals some dangers inherent in contracting with a domestic company with a different internal culture, dealing with foreign firms presents further challenges. Naturally, each national culture recognizes distinct rules of behavior and different types of signals both of which can make it more difficult for newcomers to establish bases of trust. Moreover, foreign business environments rely upon specific contracting infrastructures which consist of not only cultural elements but also indicators of reputational gradients, specific bargaining fora, recognized signaling devices, and distinct social conduits. As today's business environment becomes more global and firms engage more frequently in cross-cultural contracting, they need to invest in people who can quickly learn how to make effective use of a different contracting infrastructure.

History provides examples of how changes in a contracting culture and its related infrastructures can undermine the future growth prospects of particular constituents. For example, the Boston Associates built up an inter-organizational network which thrived until a large wave of immigrants and new entrepreneurial groups profoundly changed the prevailing contracting culture [Dalziel, 1987]. The Associates were unable to reform their communication channels to build bonds of trust with newcomers and could not participate actively in emerging industrial fields. They withdrew to become a social elite distanced from the business arena. Similarly, the position of British shipowners was weakened after 1945 when new taxation and company laws, as well as widespread social and political changes, eroded their contracting infrastructure. With the power of traditional signaling devices and reputational indicators diminished and with their communication channels disrupted, many shipowners were unable to preserve their contracting capabilities or forge new ones appropriate to the changed environment. These examples highlight the need for business leaders to monitor the health of external contracting culture and its supporting infrastructure.

III

In conclusion, focusing on contracting capability highlights the central roles that information and communication play in economic processes. This perspective emphasizes the importance of human capital, especially entrepreneurial talent, and the `soft' fibres of the institutional fabric such as incentives, leadership, and culture. The aim is to complement analysis that concentrates on the `harder' elements like structure, systems, and strategic processes which support corporate capabilities.

From history we can discover basic contracting principles and devices that provide repectively guidelines and a conceptual tool kit useful to present day contractors. Establishing presence, communicating explicitly, signaling, building reputation, and forging bonds of trust are vital in today's business arena where hierarchical arrangements are being reformed and greater use is being made of intermediate transactional frameworks. Triangulating devices, reputational deterrents, new forms of monetary incentives, and innovative contracts are needed to reinforce relationships. While history shows how entrepreneurs employed these instruments, it also teaches us that these tools are not standardized but rather adjustable. Present day contractors need to exhibit creativity in adapting them to suit the particular circumstances in which they build long-term business relationships. The past also warns us against attempting to replicate foreign contracting cultures to suit new institutional forms. Distinct historical processes in different countries have conditioned human behavior and institutional arrangements in unique ways. Western enterprise probably cannot compete with the Japanese by becoming `Japanese'. Rather it needs to rely on its own cultural forces and traditional precedents and to adapt these to legitismize derivative contractual frameworks. Above all, history reminds us that there have always been elements of continuity in the midst of change.

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