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Impact of Asset Specificity on Inter-firm
Transaction Structure: A Case Study

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Abstract

This article reports on the results of a case study that examines the characteristics of the transaction between a plastic producer firm and its supplier of steel injection mold in order to explore the possible effects of asset specificity on the firm's choice of the transaction structure. The main findings indicate that once the dependence of the firm on the supplier and the ensuing vulnerability induced by the high specificity of the inter-firm trade is remedied by trust, the comparative advantages of the existing and well-functioning inter-firm relationship provide a sufficiently strong rationale of preferring it as the most adequate and satisfactory structure for the transaction.

KEYWORDS: bounded rationality, industrial organization, inter-firm relationship, transaction costs, trust, uncertainty, vertical integration

The flow of continuous transaction between a producer firm and its suppliers can be structured in different ways. Whereas some firms choose to rely on the market mechanism for their upstream inputs, others withdraw these transactions from the market and instead integrate them in their own organizations. Still others prefer to secure the provision of their supply needs through relatively stable, especially tailored relationships. Although it seems plausible to assume that in all cases economic efficiency functions as the general guiding principle, the richness of empirical reality begets the question as which one of the feasible alternative modes of structuring the inter-firm transaction has superior efficiency properties and which factors in practice determine the choice.

One of the main factors that appears to have a significant impact on such a choice is the level of *asset specificity* of the inter-firm transaction flow. The significance of asset specificity in this respect has for instance been underlined by Oliver Williamson, who in a series of writings (1971, 1975, 1979, 1983, 1985, 1986, 1990, and 1994) brings into focus its “large and systematic organizational amplification” (1985: 53) and highlights it as one of the main three factors which – along with behavioral uncertainty and frequency of transaction – determine the magnitude of the costs associated with inter-firm transactions and which in turn have a decisive bearing on the integration decision. According to Williamson’s well-known argument, whenever the transactions take place sporadically, are straightforward and require no particular investment, they will be more likely to occur between independent firms who find market-mediated contracts a satisfactory mode of co-ordination. When on the other hand these transactions recur frequently, entail considerable uncertainty about the contractual performance on either side of the transaction, and are characterized by high levels of asset specificity then the parties are more likely to withdraw these transactions from the market and replace them instead with internal, authority-based transactions. Due to its transaction costs advantages, or more specifically due to its reducing effects on both *ex ante* bargaining costs and *ex post* monitoring costs, vertical integration is thus the structure that is most likely to occur.

Since its launching, this general argument has received much attention and generated a large body of work (Anderson 1985, Carlton 1979; Erkal, 2007; John and Weitz 1988; Joskow 1985 and 1988; Klein 1988; Klein *et. al.* 1978a and 1978b; Malone *et. al.* 1987; McGuiness 1994; Macher and Richman 2008; Masten and Saussier 2000; Shelanski and Klein 1995; da Silva and Saes 2007; Whyte 1994; Zaheer and Venkatraman 1994). Recently however some researchers have questioned its validity. Pointing to the contrary, they suggest that higher levels of asset specificity need not always lead to vertical integration and that many various considerations may counter-balance the favorable impact of asset specificity on the integration decision (Carter and Hodgson 2006; David and Han 2004; Gilson *et. al.* 2009; Heide and John 1990; von Hirschhausen and Neumann

2008; Holmström and Roberts 1998; Kvaløy 2007; Ruzzier 2009; Woodruff 2002).

This line of argument however does not invalidate Williamson's argument once it is recalled that he, recognizing the rich empirical reality, admits repeatedly that depending on the characteristics of the transaction between them the parties might find it plausible "to craft intermediate structures, located between discrete market contracting at the one extreme and hierarchical organization on the other." (Williamson 1985: 163) – intermediate structure that, in line with his *organizational imperative*, "economize on bounded rationality while simultaneously safeguard against the hazards of opportunism" (Williamson 1985: 52), or intermediate structure that by aligning the incentives and by reducing the potential frictions harmonize the flow of transaction between the parties and promote its continuity.

Taking this issue as the theoretical point of departure, the present article investigates in detail the flow of repeated transaction between a plastic manufacturing firm (The Firm) and its key supplier of injection molds (the Supplier) – a flow of transaction that, despite its high level of asset specificity, is structured in the form of a long-term, trust-based, specially tailored inter-firm relationship rather than vertical integration. While focusing on a well-known feature of industrial organization, the present article provides new, first-hand qualitative evidence that illuminates how the characteristics of the inter-firm transaction flow and in particular its high level of asset specificity support such a choice of structure. In what follows the results of the conducted case study are presented first. The article continues then with a discussion of some the findings, and finally ends with highlighting some of the implications and potential ways of leveraging these findings.

The Results of the Case Study

In conducting the qualitative research reported in this article semi-structured interviews have been used as the main method of collecting data. These interviews have been, conducted in two rounds, in the end of 2009 and the beginning of 2010. The bulk of the material contains of 14 tape-recorded interviews with four of the five members of the Board of Directors of the Firm as well as with the heads of the two important organizational entities called the Production Unit and the Purchase Unit. The conducted interviews vary in length, the shortest being 25 minutes and the longest 80 minutes, summing up to more than 12 hours all together. The interview guide consisted initially of 12 general open-ended questions of more exploratory natures but during the process, these questions have been refined and attuned gradually. In agreement with the overall purpose of the investigation, the questions have covered areas like market

uncertainties, advantages and disadvantages of the existing inter-firm relationship as well as the expected costs and benefits of integrating the Supplier into the organization of the Firm. Other questions have addressed the way in which the management of the Firm has made its choice of the mode of co-ordination and the factors that have had most impact in deciding on the chosen option.

The primary rationale of this choice of approach comes from the purpose of the investigation and from the kind of the knowledge that it aims to gain. Semi-structured interviews in other words have been considered to be the most adequate method because they – in comparison to other conceivable approaches – make possible for the researcher to have a more direct and least biased access to his or her object of study when the aim is to learn about the observed actors' perceptions and to penetrate more deeply into the experiences on which their choices of course of action rest (Denzin 1989; Lofland and Lofland 1995).

Located in the outskirts of Rotterdam, the Netherlands, the Firm is a private-owned, medium-sized enterprise with 78 employees (November 2009), and was originally established in the early 1970s as a small family enterprise, later in the mid-1980s taken over by a new group of owner-managers. They re-organized the Firm as a private joint-stock company, run by the Board of Directors, which consists of all the five new owners. Since the take-over, the Firm has gradually diversified its product portfolio that currently can be divided into two major types of items. The first one includes a number of standardized PVC products, reflecting the history of the Firm. Whereas these products are of a more general use in construction and therefore more amenable to market trade, the second type of products of the Firm consists of more specialized plastic items that are produced for a few large customers with whom the Firm has established business ties, among them a European car manufacturer.

A pair of criteria has been of special importance for the selection of the case. First, upon deliberation it was decided by the researcher that the inter-firm transaction had to involve sufficient level of specificity and uncertainty to induce the focal firm to remove it from market and look for alternative mode of co-ordination. Second, the size and organizational structure of the focal firm had to be sufficiently small to allow an administrative path in decision-making short enough to provide direct access to the perceptions of the actors actually making the choice of boundary structure. Because of several convenient circumstances such as geographic closeness, the researcher's familiarity with the industry, and his language skills, etc. the search for the suitable candidates was confined to the Dutch plastic manufacturers, and from an initial list of eight enterprises fitting the above-mentioned criteria one – the Firm – was finally selected. In addition, the Firm proved to be more established than the other ones, as it has a relatively stable customer structure and efficient distributive channels downstream for both

types of its output as well as a more or less steady supply line upstream including two mold manufacturers.

It seems appropriate to provide the reader with a short account of the technical aspects of the transaction flow that connects the two firms before presenting the results of the study. Many plastic items are produced through a process in which the raw material – mainly polymer – is first subjected to high temperatures until it is melted and then poured or injected into pertinent molds, left to cool and harden before ejected. Moreover, the production of any given plastic item requires a specific individual mold in which the shape of the item has been cut. Although it is occasionally possible to modify and re-use a previously constructed one, often a new mold needs to be designed from the scratch according to the specific requirements of the customer's order. The design and construction of an injection mold – which is normally made of quality steel and which may consist of two or more parts – require a distinct kind of considerably high degree of skill and craftsmanship that lie outside the operational core of the Firm. Therefore, on the behalf of its customer, it has to employ the specialized services of the Supplier who in turn, has to develop the mold in collaboration with a third firm specialized in designing such molds.

Each single mold is thus the unique outcome of a process of interaction among all the four firms (the customer, the plastic manufacturing firm, the mold supplier and the mold designer) linked together in the project. Its final properties are the result of a complicated process where the diverse requirements (technical, engineering, economic, consumer utility, etc.) are brought together, and its construction involves the matching of several kinds of considerations of the participating firms. As a result, the mold manufacturing requires a considerable amount of consultative communication as well as operational co-ordination along the way among the involved firms in order to work out the details and to resolve jointly the upcoming problems – thus making necessary frequent contacts and meetings between the Firm and the Supplier as well as between the latter and the mold designer, and at times even between all the three from the very beginning of the process until the mold is produced and tested before it can finally be used in the actual production of the plastic good it is intended for.

For several reasons the transaction with the Supplier is of outmost importance to the Firm. First, the manufacturing of the injection molds – the object of the transaction – is a costly process, making for the largest single investment with respect to the production of a particular plastic product. Second, in its outcome this process is also relatively uncertain since several specifics of the molds cannot be defined entirely in advance but have to be worked out in collaboration with the other parties as the process unfolds. Furthermore, since the Firm lacks in-house competence for designing and producing injection molds, the range and quality of the items it can produce depend on the capacities of its

suppliers. An inferior quality or a too limited area of competence on the part of its suppliers will disable the Firm to deliver the relatively wide range of high quality products that make up its output menu and will constrain its possibilities to maintain the reliable performance it is known for, jeopardizing thereby its reputation and its relationships with the customers.

The inter-firm transaction is obviously characterized by a high level of specificity, as the object of transaction – the injection mold – is no standard good to be found ready-made on the market. On the contrary, as mentioned above, for any particular plastic item a pertinent mold has to be designed and produced from the scratch and, once manufactured, it can only rarely be modified to fit the production of any item other than the one it has originally been made for. Furthermore, whereas the adequate design and construction of every single injection mold is a costly and complex process which requires a considerable amount of specialized investments in time and in other expensive resources, its value is confined to the particular supply chain in which it is enmeshed and has relatively very little value to any other plastic producer firm than the one that has ordered it on the behalf of its customer. In other words, once the initial investments are made, the idiosyncratic and non-re-deployable character of the object of transaction excludes or at least narrows down substantially for both firms the possibility of external trade on the open market, and undercuts their freedom to exit from the transaction if dissatisfied.

Seen from the vantage point of the Firm, the complexity of the required match among all the involved parties makes the allocation mechanism of the market unfit and unreliable. The precision of the design and construction of the mold is too important for the Firm to consider market transaction as a feasible alternative. Furthermore, even if the open market transaction were used, the Firm would potentially be exposed to the risks of the opportunistic behavior on the part of the potential suppliers who may not restrain from abusing the Firm's lack of the technical competence needed for the evaluation of the quality of the mold. The Firm thus would not only suffer on the deal and loose invested capital but could also risk ending up with an inadequate and poor-quality mold that would in turn have considerable damage potentials on its own output. In addition, the particularity of the object of transaction and the subsequent absence of similar or comparable items on the market would turn the market mechanism inadequate for the estimation of the price of the mold. Furthermore, the complexity of the transaction goes a long way to explain why the Firm finds the writing of detailed verifiable formal contracts and their legal enforcement very cumbersome if not impossible as a satisfactory protection against the hazards involved in the open market exchange.

The complexities and risks that are inherent to the transaction with the Supplier provide a prime rationale for the Firm to organize the transaction

internally and to seek to secure its control over this vital resource through ownership. Yet, the characteristics of the transaction have induced the latter to prefer instead to remedy its vulnerability by fostering a long-term, hand-in-glove non-contractual relationship in order to secure the flow of transaction with the Supplier. There are several reasons on the part of the Firm for preferring this relationship to any other arrangement. These can be clustered in two main, closely related categories.

The first category concerns the relatively high transaction costs associated with the alternative mode of co-operation – vertical integration – which is the only option left since the high level of asset specificity of the transaction excludes market-mediated transaction as a feasible alternative mode of co-operation. From a strictly technical vantage point, the capacities of the Supplier would be compatible with the core competence of the Firm and with its existing portfolio of resources; and from a purely financial point of view vertical integration is a fully conceivable option for the Firm although like any other investments the profitability of such an enterprise is uncertain and the acquisition would mean tying down a considerable amount of capital that could entail some constraints on future investments. It is rather the concern about organizational issues – both inside the future integrated organization and at its new boundaries – that causes vertical integration to appear to the Firm as a less attractive alternative in comparison to the existing non-contractual relationship it has with the Supplier. Some of these issues are highlighted below, in accordance to the relative emphasis assigned to them by the management of the Firm.

For one thing vertical integration is obviously not a cost-free alternative. In addition to the acquisition capital needed, the costs of running a larger organization appear to be a source of concern to the Firm, in particular because many such costs are hard to assess or even identify in advance while the expected pay-offs of such an irreversible move appear uncertain. The Firm in other words cannot decide on the pros and cons of such a move in advance without any precision since there is no clear and reliable information available, instead finding itself in a situation where it has to rely principally on guessing and speculating.

Another discouraging consideration regards the change of status of the current management of the Supplier and the alteration of the nature of its relationship to the Firm, from a well-functioning trust-based business co-operation between two independent entrepreneurs to one between the employer and the employee based on formal organizational authority. As the management of the Firm perceives it, this would mean a fundamental change in the whole set of incentives and mutual expectations of the parties who would then interact in different roles and along different behavioral principles. More specifically, the management of the Firm appears to be concerned not only about its ability to mitigate the potential negative impact of the integration on motivation of the

current management of the Supplier but also about its chances of success in retaining the key employees of the Supplier (see below).

Finally, among the factors on the negative side of the balance there are also the concerns of the Firm regarding the effects that a backward expansion of its current organisation would have on its boundary transactions. That is, the integration of the Supplier would push the boundaries of the Firm one step back in the supply chain and thereby cause the latter to engage in a new array of transactions with parties that for the present are less known or even totally anonymous to it. Taking place in the specialized business fields distant from its core competence area, such transactions appear to the Firm as characterized by asymmetry of information and ensuing high risks and transaction costs. The firm management in other words is uncertain to what degree it will be able to retain after integration those employees of the Supplier who have the necessary hands-on-job expertise, the required familiarity with the environment and the crucial business contacts. If it failed to provide these people with sufficiently strong incentives, the Firm would be left without access to the knowledge, competence and relations that these people have over the years accumulated. Although there would be some sharing of this accumulated competence, the Firm is concerned that there still would be persistent uncertainties surrounding the entry in the new field of activity, and is uneasy about its own ability to manage the new competence, to operate and to compete in a new market. Therefore, as the management expresses its concern in this respect, a backward integration would cause the Firm to lose the buffer at its upstream interface that currently is provided by Supplier, and even if the integration would yield a more secure supply of injection mold, it would expose the Firm to new uncertainties that it is not adequately equipped to cope with.

The second category of reasons concerns the advantageous, transaction costs reducing effects of the existing relationship that counter-weight the potential benefits of integration. This relationship originates in an earlier personal, school-time acquaintance between a pair of manager-owners of the firms, and over a relatively long period of time has evolved into an inter-firm co-operation. Due to a large number of mold-making projects a substantial amount of mutual trust has been built on both sides so that each firm has sufficient confidence in trading with the other and has a genuine interest in maintaining the good health of the relationship. As the result of the history of repeated transaction, the Firm is quite confident with respect to the continuity of transaction, and experiences considerably low degree of vulnerability that stems from the importance of the transaction and from its dependence on the Supplier.

On the one hand the trust in the performance of the Supplier and the confidence in its commitment mean for the Firm no less than a secured access to a critical resource of idiosyncratic nature with scarce supply. That is, the especially

tailored and fine-tuned relationship that the Firm has over the years developed and maintained with the Supplier provides the former with the high quality injection molds that are hard to come by. By the same token the relationship makes possible an important extension of the core competence of the Firm in that the reliable and credible commitment of the Supplier to the relationship enables the Firm to count on a complementary resource that although formally is outside the span of its organizational control and authority, is nonetheless made promptly available through the relation.

Furthermore, this trust-based relation functions as an efficient and reliable shield against the risks and uncertainties which are involved in the provision of such an important input and which cannot easily be protected against through formal contracting. The existence of the relation decreases thereby considerably the relatively high search costs and contracting costs that the Firm would have to incur otherwise. The intensive inter-firm communication that this relation makes possible during the construction of the mold offers the Firm a substantial and effective possibility of monitoring the process from the start, and eliminates or at least minimizes the risks of ending up with a poor-quality mold. The failure testing of the mold at the end of the process is evidently useful in exposing unanticipated weaknesses of the mold before it is actually used in production, but the active participation of the Firm from the beginning and the ongoing communication and collaboration based on the reciprocal trust and the mutual understanding that characterize the inter-firm relation prevents to a high extent such defects from arising in the first place – thus reducing significantly the potential transaction costs for the Firm associated with the monitoring of the performance of its supplier and with the assurance of the quality of the mold.

On each side of the relation there are fairly clear ideas regarding the meaning of good performance of course, and expectations and mutual judgements of performance on the basis of such ideas are not absent from the co-operation. Yet the trust that underpins the relation allows for honest misunderstanding or good faith differences of opinion between the parties about the nature and quality of each side's involvement in the process as well as it provides an adjustable and flexible framework that offers good possibilities to get around difficulties collaboratively and to reach accommodations when unforeseen events occur. On the whole therefore it is hardly surprising that the Firm appreciates highly not only the technical competence of Supplier but also the reliability of its performance and the firmness of its commitment to the relation – an appreciation that is expressed in the frequent description of the relation by the Firm in terms of 'a valuable collaboration,' 'a long-term, trustful partnership,' 'a strategic co-operation,' an island of security in an uncertain world' and 'an irreplaceable competitive advantage.'

Discussion and Conclusion

The main aim of the case study that is reported here has been to examine in detail the possible effects of the characteristics of the flow of transaction between a plastic manufacturing firm and its key supplier of injection molds on the decision of the former regarding the particular structure of that flow. The main finding of the study indicates for several reasons the high level of asset specificity that characterizes this flow supports the long-term, non-contractual, trust-based relationship as the optimal structure of inter-firm trade. This is consistent with the long-known fact that supply chains often involve durable, hand-in-glove relationships which not only secure the inflow of highly specialized resources but can also be a source of competitive advantage vis-à-vis other comparable firms in the market by improving or enhancing one's own relative resource position (Asanuma 1989; Barlett and Ghoshal 1989; Contractor and Lorange 1988; Dore 1987 and 2001; Hamilton and Biggart 2001; Lane and Bachmann 1998; Masten 1984; Piore and Sabel 1984; Porter and Fuller 1986; Smith-Doerr and Powell 2005; Sako 1992; Wernerfelt 1984). Moreover, the main finding of study is also in agreement with the large bulk of research suggesting that such relationships are often non-contractual or loosely specified primarily because the complex nature of the transactions that they convey normally makes strictly specified written contracts insufficient and nullifies their potential economic advantages related to the monitoring abilities of the parties (Goldberg 1980; Klein 1996; Lorenz 1988 and 1999; Macaulay 2001; MacLeod and Malcomson 1989; Palay 1984; Reve 1990; Telser 1980; Uzzi 2001; Vincent 2005). Furthermore, the main finding is also in line with the more recent observation that many firms in their pursuit of enhanced flexibility and cost efficiency strive to re-focus on their core competencies and to reduce their ownership of units involved in non-core operations (Gereffi 2005; Halldorsson *et. al.* 2003; Hite and Hesterly 2001; Lavassani *et. al.* 2009).

To Williamson's proposition concerning the impact of asset specificity on the choice of transaction structure however, the result of the research reported here relates in a somewhat more complicated manner, and requires further discussion. To begin with, this result confirms Williamson's suggestion that the characteristics of the transaction – and in particular the high level of asset specificity that supports the transaction – renders it too complex to be left to the market, thus inducing the Firm to withdraw the transaction from the market and to seek an alternative arrangement. The result is also in line with Williamson's suggestion that due to the high level of the specificity of the object of transaction – that is, due to its idiosyncratic and non-re-deployable character supported by non-trivial investments – the individual *identity* (Williamson 1985: 62) of the parties matters to each other. In other words, since every single mold is the unique

outcome of a complex and costly process in which diverse requirements and considerations dovetail, a hold-up condition arises in that the Firm and its supplier find themselves in the situation where neither party can be easily replaced by some other firm once the initial investments are made. In such a situation, characterized by the inter-dependence of the parties, the Firm and the Supplier are “effectively operating in a bilateral trading relation with one another” (Williamson 1985: 30); and with the transaction between them being neither “faceless nor instantaneous” (Williamson 1985: 56), their inter-changeability is curbed considerably.

The dependence of the Firm on its supplier and its ensuing vulnerability induced by the high specificity of the inter-firm transaction however is remedied by the substantial amount of trust accumulated over the years; and as a result, once uncertainties concerning the performance of the Supplier and the potential risks associated with bounded rationality of the Firm are reduced considerably, the high level of asset specificity does not suffice as a reason for integration. That is, the findings of the study deviate from Williamson’s general proposition in that whereas the high level of asset specificity and the dependence on the Supplier that it causes – can potentially motivate the Firm to seek a non-market structure, the backward integration does not stand out as the self-evident alternative. Rather, in the light of the costs and uncertainties associated with such a move, the *comparative advantages* of the relationship with the Supplier over integration provide the Firm with a sufficiently strong rationale for preferring it as the most adequate and satisfactory structure of the inter-firm transaction flow.

In other words, as the reported results suggest, whereas a backward integration is perceived by the Firm as a leap into uncertainty and vulnerability rather than providing a shield against risk and hazard, the smooth working of the existing and well-functioning relationship with the Supplier performs the most important functions of vertical integration, and it does so *without* the costs and perceived uncertainties associated with such a move. This relationship secures the continuous inflow of a crucial resource that due to its high specificity cannot easily be found on the market; and through the credible commitment of the Supplier to the relationship, the Firm maintains reliable access to the technical competence of its supplier, and thereby is enabled to include a vital complementary resource in its strategic core. In this relationship therefore the Firm finds a solid basis for meeting the performance requirements of its customers and for preserving its identity as producer of a certain quality (White 2002). At the same time, the relationship helps the Firm reduce the transaction costs associated with the acquisition of such a vital and highly specific resource. The mutual trust accumulated in the relationship as well as the close contact and intensive communication occurring during the development of any mold compensate for the bounded rationality of the Firm caused by its lack of necessary

technical competence. The same properties of the relationship also shield the Firm against the risk of opportunistic behavior and moral hazard that it is potentially exposed to due to the poor protection available in formal contracting. The trust-based, long-term character of the relationship in other words provides the Firm with the adequate and sufficient safeguard that – in the absence of suitable and satisfactory legal devices – it needs in order to remedy the vulnerability caused by its dependence on the Supplier and to hedge itself against the potential tendencies of the latter to capitalize on its bounded rationality and behave opportunistically or renege, as an anonymous supplier in a one-shot market exchange would be tempted and have the opportunity to do.

Summing up, seen in the light of Williamson's discussion concerning the organizational imperative under which firms behave, the long-term, non-contractual, trust-based relationship that has been developed and fine-tuned over the years between the Firms and the Supplier stands out as the optimal structure that, jointly crafted, aligns the incentives of the parties and that harmonizes the flow of inter-firm transaction, thus prompting its continuity. In this capacity, the relationship therefore is the transaction structure that, due to its comparative advantages, is preferred by the Firm to the other alternatives, notably market mediated exchange and vertical integration.

Some Final Words

The choice of the organization of transaction flows is far from being straightforward; and as asserted by Williamson (1994: 90), "informed choice among alternative forms of [such] organization entails trade-offs. Identifying and explicating trade-offs is the key to the study of comparative economic organizations. [Therefore] social scientists ... need to come to terms with that proposition." To do this much more research work is needed as well as further theoretical development and methodological elaboration. One of the central tasks in this respect regards the development of adequate analytical tools, including measurement procedures needed for a more precise assessment of transaction costs at the firm-level (Hobbs 1996). This is a necessary requirement for the exact evaluation of the costs associated with the alternative modes of organizing the inter-firm transaction, for the precise measurement of the comparative advantages of business relations as such an alternative, and for the accurate identification of the tipping points and the threshold values in the trade-offs among the feasible alternatives. Such matters are becoming increasingly urgent as vertical integration – the badge of large-scale industrialization – appears to have somewhat lost its attraction and as diversified, durable inter-firm relations are instead rapidly becoming the nuts and bolts of the new, more disintegrated and flexible

production apparatus that better serves the flexibility and adaptability requirements of the new market conditions.

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