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Insights into Buyer-Supplier Relationships: The Case for Value Transparency

Abstract

This paper reports on the preliminary findings of a two-year project investigating transparency in supply relations. Employing participative action research, the conceptual model has been tested by a series of open interviews and through the use of NVivo, the key issues relating to the management of innovation and technology identified.

Introduction

Drawing on the research findings of a two year project investigating the management of transparency in supply, this paper aims to challenge the classical model of buyer-supplier relationships offering value transparency as a viable alternative to the traditional customer-supplier hierarchy and its institution-based processes. Employing action research, the project has involved close collaboration with practitioners from four UK manufacturing companies. The researchers have been granted access to study closely these companies' interactions with their suppliers, resulting in nine case studies involving the four industrial collaborators and seventeen of their supplier organisations.

The conceptual development of transparency that led to the first phase has already been presented at IMP 2001. The research is being carried out in two phases, Stage I and Stage II. Stage I has been completed and using NVivo as a research tool, the resulting data has been combined and subjected to rigorous analysis. Through such qualitative analysis, the generic themes common to all the cases has been identified and the initial findings presented (Lamming, Phillips and Caldwell, 2002a and 2002b). These results have contributed to the development of the second phase of the project: a series of structured interviews carried out with all the participating organisations.

This paper will present the outcomes of the Stage I findings as they relate to technology and innovation systems, discussing how traditional concepts regarding supply relationships may not adequately address the problems and issues inherent to current buyer-supplier practices. The paper will outline the concept of value

transparency, drawing on an innovation systems perspective. This will be followed by a discussion of the research methodology before the presentation of the findings as they relate to the management of technology and innovation. The paper will also look at how these findings will influence the concept of value transparency and consider their contribution towards the shaping of the final model of Transparency that will be presented upon completion of the research project.

Value transparency – an innovation systems approach

At IMP 2001, we addressed how institutions in supply markets influence the process of innovation between firms (Lamming, Phillips and Caldwell, 2001). Adopting an innovation systems approach we focused on the role of interactive learning, arguing that, in general, firms do not innovate in isolation and that the process of innovation is influenced by a variety of organisations and institutions. Innovation requires co-operation as well as competition, as firms seek to acquire external capabilities.

However, as the innovation systems approach highlights, this is strongly determined by the institutional context. We suggested institutions, as in informal constraints and formal rules, may restrain as well as support the transfer of knowledge, skills and information within inter-organisational relationships. Presenting our conceptual model of value transparency, we proposed existing institutions such as open-book negotiation have failed to adapt to the changing nature of today's product and process technologies.

Technologies are becoming increasingly complex and diverse; firms are building on their range of technologies while decreasing their product range resulting in the convergence of distinct technological fields coupled with more multi-technological products (Granstand et al, 1997; Granstand and Sjolander, 1990; Oskarsson, 1990; Patel and Pavitt, 1994). Consequently, firms are finding themselves in a position where they need to expand their range of competencies (Patel and Pavitt, 1994). The interaction between users and suppliers is widely acknowledged as a promoter of innovation and technological development (Teece, 1986; Lamming, 1993, p.230; Gadde and Håkansson, 1994, p. 34), past IMP literature has highlighted the importance of customer-supplier interactions (IMP Group, 1982; IMP Group 1997; Hallén and Sandström, 1991). If sales and purchasing are to fulfil their roles as institutions, supporting the commercial and technical survival of firms in a supply network, they must adapt to reflect the changing nature of product and process technologies.

The supply relationship offers a critical means of supporting this adaptation. Firms can look towards developing more co-operative relationships as a means of expanding on their knowledge and skills base. Unfortunately, practices such as open-book negotiation, which is widely practised and commonly accepted as suitable approach for broaching the more immediate pressures on firms such as cost, have failed to adapt in parallel with such co-operative relationships. As Lundvall (1986) highlights, sunk investments in past practices may result in the creation of rigid customer-supplier relationships that cannot adapt readily, thus constraining technological change.

Institutions may persist even when they serve no function, although they may fade

away or adopt a new role (Polyani, 1957, Edquist and Johnson, 1997). Applying this to open-book negotiation, it may be that as the process of industrial buying and selling becomes more routinised, open-book negotiation will become unnecessary; driven by consumer markets, suppliers may achieve stipulated cost reductions. To operate more effectively, both parties in a supply dyad must develop new organisational skills and resources that may support the process more effectively. We suggested that where collaboration is a valid and viable option, *value transparency* may be employed as one such resource, acting as a shared competence in a *creative relationship* representing an *inimitable competence* for the dyad (Lamming, Caldwell and Phillips, 2001). Such creative relationships go beyond the limits of extant contracts and may be regarded as shared competencies or complementary assets. In this light, the ability to develop value transparency in inter-organisational relationships may be viewed as an organisational capability. However, such a capability cannot be created independently or in isolation, highlighting the need for shared or distributed capabilities.

Our conceptual model displayed how *value transparency* (that is, two-way, selective exchange of knowledge or information flows) might be implemented by organisations as a resource within supply relationships. In contrast to classical hierarchical models of buyer-supplier relations, we propose the model of value transparency as an effectual way of developing innovative capabilities between firms. Working within a within a defined project framework, value transparency may be selectively employed as a new resource or innovative capability for customers and suppliers, acting as a valid alternative to the institution based processes of traditional customer-supplier relations.

Our framework for value transparency offers an insight into how this may be supported. Using the light absorbing properties of minerals as a metaphor, the identification of three manageable forms for the exchange of sensitive information have been identified: *Transparency*, *Translucency* and *Opaqueness*. Two further unmanageable states exist, *Dazzle* and *Black Hole*. Employing such differential transparency states avoids the practice of terming a relationship as simply ‘transparent’, supporting a more discernible view that accepts a supply relation may exist within one or a range of different transparency states. Such states are not bound or permanent and may shift and alter, purposefully or otherwise, as the relationship evolves.

Methodology

Subsequent to its development, the conceptual model has been tested by means of a series of interviews with the four sponsor companies and selected suppliers. Adopting a participative action research approach two rounds have been scheduled, Stage I and Stage II, Stage I having recently been completed. This paper reports on some of the findings of the Stage I interviews and discusses their contribution towards understanding the practicalities of implementing value transparency in terms of promoting interactive learning and technological development.

The Stage I interviews acted as a “warm-up” procedure, introducing the participating supplier companies to value transparency and the underlying rationale and providing the researchers with an insight into each of the case study relationships. Each of the four sponsor companies nominated between one and three case studies. The resulting

eight case studies involved seventeen supplier companies, from both dyads and supply networks. All the suppliers had manufacturing backgrounds with the exception of one organisation, which was an IT service provider. The firm size of the nominees ranged from very small to multi-nationals.

The Stage I interviews were open-ended and lasted for about an hour. The 39 interviewees consisted of personnel from both the customer and supplier companies, from a range of technical and commercial functions. In many cases, the choice of interviewees was often determined by firm size; in SMES many personnel would straddle both commercial and technical functions. Interviews were executed at the participants' sites and secondary data was supplicated.

Adopting a participative action research approach, the research team has maintained close interactions with the case study companies. Regular meetings have ensured that the case companies have provided an input into the design of the model. Through presentations, the practitioners have been able to reflect upon the model in relation to their own experiences and ways of working.

Finally, it is important to emphasise that during the interviews, discussions were centred around relationships on a general, not specific, level. Consequently, any references to 'customers' and/or 'suppliers' are not necessarily directed towards the case companies.

NVivo

NVivo was employed as a means of analysing the data arising from the interviewees.

NVivo¹ is a qualitative software package that supports analysis across a wide range of qualitative fields and methodologies.

On account of its unstructured and frequently shifting nature, qualitative data cannot be readily subjected to quantitative analysis. Although a wide variety of qualitative research methods exist, they have certain common themes: all require the researcher to tread sensitively and without preconceptions or previous quantification; throughout the study, field notes, annotations, and models etc should be employed to document any findings, such documentation being data

When using NVivo, data is collected into two main data systems: the *document system* and the *node system*. The document system acts as a project manager, organising all compound text, such as draft proposals, interview transcripts and bibliographies, supporting the linkage, integration and exploration of data.

Through the node system, all concepts, themes and topics etc associated with the research, are categorised. Here, documents are coded and/or multi-coded when any specific topic(s) arise(s) in the compound text or 'documents'. There are four types of node: 'free nodes', 'tree nodes', 'case' and 'case type' nodes and these enable both

¹ Initially known through the acronym NUD*IST (Non-numerical, Unstructured Data require ways of Indexing, Searching and Theorising)

structured and unstructured representation of the topics

Qualitative data analysis involves the development of categories, concepts and ideas that may eventually lead to the formation of grounded theories. When using NVivo, this is usually attained through the use of nodes. Those topics or ideas that cannot be readily grouped become free nodes; those that can become tree nodes.

In the case of this project, discussions between the research team and the sponsor companies contributed towards the selection of nodes, these being ideas, topics and concepts that were felt to be of particular relevance to the research. This ensured that all the material that had arisen through literature reviews, previous conceptual workings and the practitioners' insights and perceptions was fully integrated into the data analysis.

More than 200 nodes were identified and classified as either free nodes or tree nodes. The node list is neither finite nor fixed, as understanding grows and the nature of the project alters the list can be added to and changed, providing the potential for any new ideas, topics etc to be included and explored. Table 1 shows the initial node list, distinguishing between the free and tree nodes. All child nodes relating to the tree nodes have not been included on account of the number concerned.

Attribute values were allocated to any further information not associated with text retrieval or coding, but considered essential to the project. For example, age of the relationship, product spend, flexibility of the relationship. These are shown in table 1.

As the research progresses the data analysis will include more complex searches. As yet, only node searches have been conducted but analysis involving, for instance, search matrices will be employed. The initial searches have contributed to the identification of the following nine key themes, which have also provided the inductors for the Stage II structured interviews.

1. Communication
2. Competition
3. Dependency
4. Supply practice
5. Project
6. Quality
7. Risk
8. Trust
9. Value

For the purpose of this paper, the focus was on the management of technology and innovation. It became apparent that there were common issues to each of the cases studied that related to innovation and technological development and may therefore being endemic to supply relations as a whole. The next section shall discuss these issues.

Findings

Focusing on the management of technology and innovation in supply relations, our preliminary findings showed that there appear to be three key issues that were common to the cases studied these being legacy, institutional embeddedness and knowledge openness.

1. Legacy

Past history appeared to strongly determine the manner by which technology is managed in supply relations both positively and negatively. For instance, over time the parties involved in a supply relationship had developed an understanding of each other's ways of working, particularly at a technical level. This resulted in a high degree of tacit understanding that would be very difficult to establish or replicate elsewhere.

This has advantages in the respect that all parties had learnt and witnessed together prior mistakes and successes and over time had developed a pool of shared knowledge. Personal relationships have grown, making it easier, for instance, to contact relevant individuals within an organisation. In nearly all the cases, experience was quoted as a valuable asset and frequently cited by buyers as a reason not to source a product or service elsewhere.

For suppliers, past history also brought with it several disadvantages. Customers were quicker to remember past failures than they were to remember successes and this, suppliers feared, was held against them long after the event even if it was a one-off event. Furthermore, customers often found it difficult to perceive suppliers in an alternative light. Despite efforts by suppliers to be more proactive technically, they

would frequently feel their efforts were not being recognised; their past history forever determining their future. It became apparent that suppliers were particularly susceptible to “pigeonholing” by their customers, the customers unaware of, or blind to the fact that suppliers were technically competent in other areas. It seemed that, in long term relationships, suppliers were known for the sum of the part(s) that they had been delivering to the customer, and it was very difficult to move away from such labelling, thus discouraging suppliers to consider developing alternative products or processes since such efforts would go unnoticed.

Finally, it appeared that customers and suppliers entwined in difficult relationships found it hard to adopt or alter their approaches to one another. Past history appears to dictate how each party would interact with another to a point where it was part of each firm’s culture. To adopt more co-operative ways of working would require all members of the firm to consciously alter their perceptions and preconceptions of the other firm if the legacy of the past were to be forgotten or overcome.

2. Institutional Embeddedness

Traditional practices and routines defined the nature of exchange amongst parties. These were not limited to the buyer-supplier interface, but throughout the relationship as a whole. Such traditions or routines made it difficult for the firms to shift towards more co-operative ways of working despite the fact that all those interviewed recognised co-operation as fundamental to developing effective supply relations. This extended across the majority of functions, from design to testing. For instance in the customer firms, the design process rarely involved input from the suppliers despite their wealth of knowledge and experience in a specific field and this seemed to be

purely out of habit rather than reason.

In one case company, the testing procedures restrain innovation within supplier firms; the customer discouraging the suppliers from innovating on account of the time and cost spent on validating any changes to existing products or processes. Such testing affected the firm's move towards E-auctions, the substantial cost savings made through sourcing via e-auctions diminished and/or delayed by the resources required to validate any new suppliers or products/processes.

Such institutional embeddedness serves to constrain technological development, acting as a brake on the pace of change and fails to encourage either party to move towards more innovative ways of working. Several of the interviewees acknowledged they were so deeply entrenched in their routines and processes that any moves towards more co-operative ways of working would be difficult to achieve.

As might be expected, institutional embeddedness appears to be more prevalent in the customer firms, the size and range of functions making it difficult to adapt quickly and effectively. This appears to be reinforced by the high rate of staff turnover within the customer firms. Inexperienced personnel launched into new positions would revert to old tried and practised ways of working rather than risking new approaches, thus perpetuating old styles of working and contributing to institutional embeddedness.

This appeared to be common to procurement functions, where lack of professionalism was an additional problem; buyers without the necessary skills and knowledge tend to adopt power-based approaches that oppose any moves towards closer collaboration between customers and suppliers.

3. Knowledge openness

On a technical level, knowledge appeared to be shared relatively openly and freely, especially when problems arose: both parties interacting closely in the pursuit of a solution. This was in stark contrast to the commercial personnel, where knowledge openness was rarely seen. When technical issues arose that might delay delivery, buyers would fail to become involved. This has been discussed in a previous paper (Lamming, Phillips and Caldwell, 2002a) where we suggest it could be on an account of buyers' unwillingness to become too close to a supplier as this may weaken their negotiating power. However, we also discussed the language barrier that exists between technical personnel and buyers lacking a technical background; without a common language it is difficult for both parties to confer. Such barriers to communication were a major source of frustration for suppliers, particularly when buyers displayed an inability to grasp the nature of a technical issue. However, this may explain why technical personnel within a supply relationship share knowledge more freely: simply they can. Also, technical personnel are more interested in investigating technological issues than commercial constraints and will enthusiastically discuss and share relevant information when appropriate.

Generally, suppliers were perfectly willing to share knowledge with their customers, particularly if it provided them with an opportunity to display their full range of technological capabilities. However, many customers appeared to be unaware of their suppliers' capabilities. Whether this was through ignorance or arrogance has yet to be determined. Despite suppliers' enthusiasm to provide a knowledge input into projects, such offers were rarely taken up by the customer firms despite the missed opportunity of an insight into non-standard processes. An unwillingness to relinquish

control appears to be the customers' overriding reason. By allowing suppliers to make an input into, for instance, the design process, customers reduce their overall control of a project. Therefore, it would seem that an underlying fear of letting go may be one of the reasons why customers are finding it difficult to pursue more co-operative ways of working with their supplier firms.

Conclusions

With its focus on the management of technology and innovation, this paper has identified three key issues that were common to the cases studied and that may have major implications for technological development within supply relations. It appears that within supply relations, past history strongly determines the rate and nature of technological development, the rigidity of the customer-supplier relationship making it difficult for both suppliers and customers to change the direction of technological development. It may also be that the wealth of experience and understanding that develops between the two parties entraps customers within a relationship.

Despite recognition of the need for more co-operative relationships, institutional embeddedness, in terms of entrenchment in outdated and ineffectual routines and practices, is acting as a barrier to more innovative approaches. This is not restricted to procurement and is endemic across functions. If a shift is to be made, it needs to be adopted and accepted across an organisation if benefits are to be accrued.

Successful co-operation between customers and suppliers will require knowledge openness that is reciprocal and based on the mutual benefits that may be attained.

Traditional hierarchical approaches will only serve to degrade the process. We

suggest that value transparency may provide the means of promoting more co-operative and innovative relationships. However, to act effectively it must be understood and adopted across functions.

Rather than promoting knowledge openness we suggest that knowledge should be shared on a justified and selective basis where the mutual benefits, expectations and objectives are identified all parties. Finally it should be tailored in accordance to the nature of the supply relation, ensuring that cultural and historical idiosyncrasies inherent to all supply relations are not overlooked.

Free nodes	Tree nodes	Attributes
Communication	Financial	Age of relationship
Dependency	Technology	Age of whole relationship
Competition	Education and training	Contract length
Open book negotiation	Information provision	Customer or supplier
Project	Relationships	Date of interview
Quality	Transparency	Firm size
Risk	Contracts	Flexibility of relationship
Trust	Organisational Structure	Gender of interviewee
Value	Strategy	Importance of relationship
	Supply Practice	Number of alternative suppliers
	E-Supply	Number of suppliers involved
	Business Environment	Product/service
	Location	Product/service spend

Table 1

The free nodes, tree nodes and attributes used during NVivo analysis

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