STRATEGIC PURCHASING: IMPLICATIONS FOR NORTHERN IRELAND BUSINESS

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Introduction

Increasing the proportion of goods (and services) which are sourced locally by multinationals and other large companies in Northern Ireland and the Republic of Ireland has long been advocated as an employment generator. To enable this to happen requires as Harrison and Brady (1993) state ' an understanding of what factors influence the buying process and how this process can be influenced to the advantage of potential supplier businesses in both parts of Ireland'. For some time now large manufacturing companies have been moving toward the incorporation of the purchasing function as a key component in manufacturing strategy whereas previously it was regarded as tactical/operational in nature. The purpose of this study was to investigate the extent to which large firms within Northern Ireland are moving in this direction and the likely implications of such movement for local suppliers. This is an important issue since it is necessary to determine if large firms are adopting new ideas so rapidly that local small companies which one would have expected to be suppliers cannot deliver in terms of the more collaborative and complex relationships of modern purchasing. This has important implications for the local economy in terms of maintaining competitiveness to ensure employment and in identifying strategies for the development and growth of local suppliers.

Manufacturing industry, since the 1960s, has had to face an increasing range of pressures and problems. These have included the introduction and application of new technologies, the strengthening of domestic and international competition, and increasingly volatile trading conditions. Manufacturing organisations in the UK have been repeatedly criticised for failure to emulate the apparently more efficient manufacturing methods of overseas competitors in Europe and Japan (Kirosingh 1989). UK industry has therefore found itself forced into a reappraisal of its production processes, working practices and labour relations (Nolan 1989). The recent Technology Foresight (1995) Report provides further evidence to support these views and indicates that even though manufacturing employment in the UK showed a reduction of 30% in the 1980s compared with reductions of 17% in France; 5% in the USA and an increase of 13% in Japan, labour productivity is still well below that of the other major industrialised nations. For example, with regard to labour productivity measured in terms of manufacturing output per head, the UK lags Japan by 38%, France by 62% and

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the USA by 100%, based on 1991 figures. It should be noted that similar statistics for Northern Ireland indicated that manufacturing output per head in 1989 was only 73% of the UK figure (Hitchens et al (1993)).

The introduction of new manufacturing techniques (for example, just-in-time, quality circles and material requirements planning – MRP) has attempted to stem the relative decline of UK manufacturing industry. Concurrently, organisations have embarked on two change processes of major importance to the purchasing function, by reducing the number of firms in their supply base (Womack (1990)) and at the same time changing the way they do business with the remaining suppliers (Lamming (1993) and Macbeth and Ferguson (1994)). Consequently, over the last twenty years a new view of purchasing has gradually emerged from that of being considered a clerical function with the short term goal of buying as cheaply as possible to that of being regarded in many companies as a major strategic function. This new attitude towards purchasing is not surprising, as it is responsible for more than half the total costs in many companies. Nevertheless, the scale of the recent change is so considerable that an analysis of its evolution is of interest, due to its likely implications for customer/supplier relations.

In terms of the traditional view of purchasing, or adversarial model, Shapiro (1986) argues that the primary goal is to minimise the price of purchased goods and services. The approach hinges on three major activities:

- The buyer relies on a large number of suppliers who can be played off against each other to gain price concessions and ensure continuity of supply;
- The buyer allocates amounts to suppliers to keep them in line;
- The buyer assumes an arm's-length posture and uses only short-term contracts.

While this tactic often results in a lower purchase price, it assumes that there are no differences in suppliers' abilities to provide value-added services, technology gains, process innovations and other methods of gaining competitive advantage. Such purchasing behaviour, exhibited by the adversarial approach, does not therefore make direct use of the total resources of the suppliers and does little to engender long-term coordination or cooperation between buyer and supplier.

Mayhow (1985) suggested a movement away from price-based criteria, in many organisations, to other performance criteria, such as, quality and delivery, for evaluating the purchasing decision. A further development was identified by Morgan (1987) who observed a tendency among customers to move from an arm's-length relationship (a number of competing suppliers) towards partnership arrangements.

Gadde and Hakansson (1994) identified the three key strategic purchasing issues as: the make or buy decision; the supply base structure; the customer supplier relationship. They and Briggs (1994) emphasise the need for organisations to move toward closer cooperation in the buyer supplier relationship. Market pressures for increased product complexity and variety based on a wide range of technologies and response at higher levels of quality and reliability but declining cost have demonstrated that few, if any, organisations can do it all by themselves. They need to supplement their core competencies

by allying with other providers of complementary competencies to satisfy their customers. The real productivity, design and quality improvements are not obtainable unless the suppliers in the partnering arrangement innovate to the best of their abilities in conjunction with the buyer organisation. This, however, requires a major shift in mind-set or operational paradigm, from what Sako (1992) terms arm's-length contractual relation to obligational contractual relation. The features of this change in outlook are encompassed within Table 1, in which the traditional adversarial approach is compared with the collaborative or partnership arrangement between buyer and supplier organisations.

Table 1:
Comparison of Adversarial and Collaborative Purchasing Relationships (Lamming (1993))

Factor	Adversarial	Collaborative
1. Nature of competition in supply market	Price based and cut throat	Collaborative and technology-based
2. Basis for sourcing decision	Competitive bids with price-based supplier accreditation	Long-term performance history
3. Role of information transfer and its management	One-way and closed	Transparency of costs in each direction
4. Attitude to capacity planning	Independent	Shared problem which is strategically planned
5. Delivery practice	Erratic	JIT, small quantities on an agreed basis
6. Dealing with changes	Secretive game playing, win/lose	Collaborative, cost reduction programmes with shared benefits, win/win
7. Product quality	Aggressive goods inward inspection	Shared joint efforts with aim of zero defects
8. Role of R&D	Assembler designs and supplier makes to specification	Shared – supplier involved early in R&D process
9. Level of pressure	Low – purchaser will go elsewhere if dissatisfied	High – continuous improvement to identify better methods and materials leading to lower costs

Hence, there are a number of intangible and tangible factors which must be present for a partnership to be successful. The intangibles are regarded as: senior management commitment; trust; flexibility; teamwork; patience. The tangibles are: reduced costs; adopting total quality management; zero defects as a quality target; on time payments; joint research and development; electronic data interchange; faster time to market; on time deliveries with JIT if necessary; the reduction/elimination of stock. The working tools used include: continuous assessment with constructive feedback and joint problem solving; the involvement of all relevant personnel and not just buyers and sales; continuous improvement; open book costing; simple agreements; improved parts forecasting.

Therefore, many manufacturers recognise that their ability to become world-class competitors is based to a great degree on their ability to establish high levels of trust and cooperation with their suppliers. With higher standards of performance being demanded in each business environment, companies are of necessity looking to their suppliers to help them achieve a stronger competitive position. Ohmae (1989) advocates that in a world of converging consumer tastes, rapidly spreading technology, escalating fixed costs and growing protectionism, more collaborative relationships with suppliers are critical instruments for serving customers in a global environment. For example, Done (1994) highlights the case of Chrysler, the car manufacturer, which purchases 70% of its parts and materials and looks for suppliers who are on the leading edge of technology. This expertise is, in effect, purchased by Chrysler, who rewards its relatively small cadre of suppliers (500 supply 80% of purchased parts and materials) with contracts spanning several years. An implicit assumption underlying Chrysler's action is that loyalty must be rewarded and commitment must be encouraged.

Methodology

Much of the purchasing literature contains recommendations as to the issues which are important in establishing successful partnerships (David(1990), Ellram (1990 1991), Partnership Sourcing Ltd. (1991), Venkatesan (1992), Chao, Scheung and Ruch (1993), Lamming (1993) and Briggs (1994)). Classifying and consolidating the many factors quoted as important gave rise to a list of fifteen criteria which is proposed as a model to describe the most sophisticated purchase which is likely to be required by a manufacturer. That is, the package associated with a component or subsystem of strategic importance to a final product. Wing sets for an aircraft assembler are examples of such items. In the case of mature items for which little opportunity still exists for product or process design improvements and which in many ways can be regarded as commodities a subset of these criteria would be sufficient. Printed circuit boards for domestic appliances are examples of such items where the criteria are reduced essentially to just quality and delivery since they are available at very competitive prices from a range of sources worldwide. The fifteen criteria of the proposed model are given in Table 2.

Table 2: Criteria of Proposed Model

1 Quality	6 Lead times	11 Packaging
2 Costs	7 Investment records and plans	12 Capacity
3 Management skills	8 Communications	13 Culture
4 Logistics	9 Problem solving capability	14 Health and safety attitudes
5 Design capability	10 Workforce skills and training	15 Environmental awareness

This model has been tested as part of a series of structured interviews with senior purchasing managers in multi-national and other large manufacturers in Northern Ireland and ten such interviews have taken place to date. The companies were selected from the IDB list of manufacturing organisations and includes companies from North America, Asia Pacific and Europe (including UK). Most of these firms are subsidiaries which have been set up for a number of reasons including inward investment inducements, while some originally were local firms which have been bought under the acquisition strategies of the multi-nationals and large national companies concerned.

That part of the interview concerned with the model first of all determines whether or not it is thought that anything of importance has been omitted. So far none of the respondents have suggested the addition of any matters of substance nor has anything been thought to be superfluous. A total of seventy questions in subsets under each of the headings are then posed. These questions are designed to reflect what a company which has adopted a total quality management philosophy and aspires to be world class would expect from a supplier in a partnership relationship either now or as time passes. For example under quality there are five points:

- Your suppliers have to have a formal quality assurance system such as BS 5750/ ISO 9000
- Your suppliers have to be operating a continuous improvement system (KAIZEN)
- Your suppliers have to be operating with statistical process control (SPC)
- Your suppliers are required to express their targets in parts per million (PPM) with zero as the ultimate aim
- The quality of goods and services from suppliers is taken for granted.

The questions are used to ascertain the current situation, recent changes in the situation and what it is likely to be five years from now. This is done in an attempt to get some feel for the dynamic of the process. For example: "Your suppliers have to be operating with statistical process control. If yes – for how long has this been a requirement? If no – will this be a requirement within the next five years?"

Results

The preliminary results, as expected, show a lot of variation between the various companies in the detail of their responses. Since the companies were drawn from a

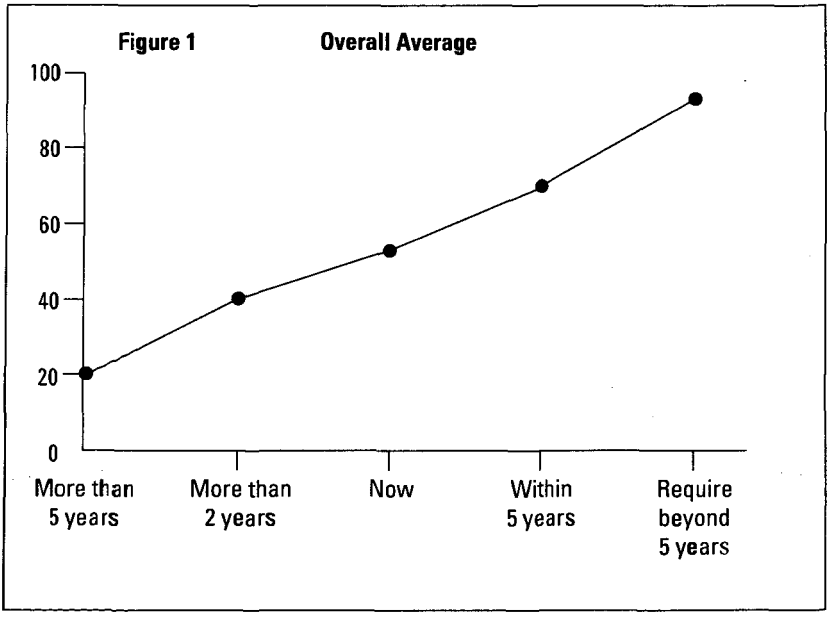
variety of industries including electronics, mechanical engineering, aerospace, chemicals and medical packaging, it is difficult to be industry specific in the analysis of what is essentially a pilot survey. However, even allowing for an element of 'political correctness' in the answers, that is, answering positively to a query because the respondent thinks the company has to be seen to be up to date with the latest management thinking, there is little doubt that large manufacturing companies have embraced some form of the total quality management philosophy together with world class goals. Importantly they have similar expectations about the performance of their suppliers now or within the next five years. Table 3 gives the cumulative percentages of all responses to the various questions for each of the fifteen criteria.

Taking the overall total scores from Table 3 provides Figure 1 as indicative of the general trend. It can be seen that the expectations of large organisations with regard to the total package of capabilities they require of their suppliers is changing quite quickly. The table indicates that since the 1980s major companies have been demanding from their suppliers an increased emphasis on lead time reduction, management skills, company culture, problem solving capability and workforce skills and training. This reflects the increasing influence of Japanese management practices. Of the remaining

Table 3: Questionnaire Response for the Fifteen Criteria

	Demanded more than 5 years	*Demanded more than 2 years*	*Demanded now*	*Demanded within 5 years*	*Demanded after 5 years*	*Not Applicable*
Quality	17.8%	31.1%	37.8%	80.0%	100.0%	–
Costs	20.6%	36.5%	47.6%	73%	100.0%	–
Management	23.6%	47.2%	72.2%	83.3%	91.6%	8.4%
Logistics	44.4%	59.2%	74.0%	88.8%	96.2%	3.8%
Design	24.1%	29.7%	42.7%	61.2%	89.0%	11.0%
Lead Times	5.6%	27.8%	77.8%	77.8%	88.9%	11.1%
Investment	33.1%	35.5%	39.9%	51.0%	99.9%	0.1%
Communications	29.6%	37.0%	59.2%	70.3%	96.2%	3.8%
Problem Solving	38.9%	47.2%	75.0%	83.3%	91.6%	8.4%
Workforce Skills	0.0%	25.0%	36.1%	69.4%	88.8%	11.2%
Packaging	5.6%	5.6%	27.8%	66.7%	88.9%	11.1%
Capacity	44.4%	55.5%	61.1%	66.7%	88.9%	11.1%
Company Culture	11.1%	33.3%	50.8%	73.0%	92.0%	8.0%
Health & Safety	27.8%	33.4%	44.5%	50.1%	89.0%	11.0%
Environment	7.9%	12.7%	23.8%	63.5%	90.5%	9.5%
Overall Average	21.1%	34.2%	50.0%	71.2%	93.4%	6.6%

factors, logistics, capacity, investment records and plans, health and safety attitudes, costs, design capability, communications and quality having always been considered important nevertheless received increased attention. Packaging and environmental awareness while not regarded as important at the start of the period have now become of interest. While the future trends for all the factors are upward, quality, environmental issues and packaging can be seen to be of vital importance. Perfect quality is becoming the expected norm by large companies with widespread demands for statistical process control, continuous improvement programmes and zero defects as a target. The interest throughout the developed world in green issues is reflected in the importance attached to the environment and its allied factor packaging. Many countries have already introduced legislation in these areas in response to public pressure.



Further research is needed to establish how local suppliers are responding to this trend. One danger in not keeping up with such changes is that suppliers are less able to meet the higher level needs of the purchasers and hence will be able to supply only commodity-like items. However, doing so means having to compete against the low cost economies of Eastern Europe and the developing nations. This is supported by preliminary analysis of four of the companies interviewed who provided information on the percentage of purchases (by value) sourced locally and outside Northern Ireland. It was found that these companies purchased only 20% from local suppliers, of which only 7% of the items could be considered strategic in nature and one company was actively investigating Eastern Europe for run-of-the-mill machined parts.

It should be noted that the discussion so far has been concerned with the most complex case referring to important subsystems for which the purchaser provides, not a detailed specification, but a general outline and so the total package to be purchased includes much of the detailed design and development required. Indeed, it is not now unusual for car manufacturers to seek suppliers perhaps three years before a new model enters production so that the design and development expertise of the suppliers can be integrated into the new product development process via concurrent engineering. For simple items such as mature components which have become to be regarded as commodities a much reduced set of the model criteria such as quality, delivery and cost will likely be sufficient.

While partnership sourcing removes the adversarial win/lose culture of the traditional approach the continued success on a win/win basis implies that what the purchaser seeks in a partnership is the best overall package at the lowest ongoing total acquisition cost. As Lamming (1993) points out there is unrelenting high pressure in a partnership for continuous improvement in all processes and products in a search for lower costs, that is, a partnership is an obligational contractual relationship (Sako (1992)).

Conclusions

The purpose of this study was to explore the changing characteristics of what large companies wanted to purchase from their suppliers. A fifteen criteria model is proposed which represents the purchased package in a partnership relationship.

The model has been subjected to preliminary testing as part of an ongoing series of structured interviews with large companies about the changes in the purchasing function in general. The results indicate that such companies have adopted a total quality management philosophy and are committed to becoming world class. This has resulted in an increasing emphasis on the strategic importance of the purchasing function. The fifteen criteria model has been found to represent comprehensively the purchased package now sought from suppliers. All fifteen criteria are needed when considering strategically important items and complex subsystems, while it is likely that reducing subsets will be adequate as items become more and more commodity-like in nature. The long standing and continued importance of logistics may be partially explained by the peripherality of Northern Ireland and the additional pressure this places on manufacturers to ensure delivery to schedule.

The important buyer-supplier relationships are now obligatory contractual as opposed to the traditional arm's length. The aim is for win-win relationships based on close cooperation at all stages of the value chain. Aggressive pricing based in part on projected experience curve benefits has been identified as one of the competitive weapons used by Japanese manufacturers (McNamee (1985)). The increased outsourcing by lead manufacturers means that experience curve gains during the lifetime of a product are now very dependent upon the performance of suppliers. This is reflected in the

expectation of large companies in many industries for year on year cost reductions by suppliers based upon constant attention to continuous improvement in all aspects of the product and the associated processes. For example, the Boeing Corporation (Yang and Rothman (1993)) have established an action plan which will attempt to reduce their cost base by 25% by the year 2000. These changes place great onus on the many sub-contractors to support and to implement policies which will facilitate the achievement of this target.

Business leaders in Northern Ireland have long realised the importance of remaining competitive in the international marketplace. The Northern Ireland Growth Challenge is a private sector initiative launched in 1993 with a view to identifying the means by which growth of the local economy can be accelerated. One area of particular interest is the development of a competitive engineering supply base. As part of this initiative supplier clubs in a number of industrial sectors are in the process of being established to develop the supplier base and enhance capabilities through inter-firm learning and sharing experiences.

There are therefore clear implications for indigenous suppliers since it is highly unlikely they will be able to compete with the low wage economies. To supply multi-national and other large manufacturers they must adopt a total quality management philosophy and be able to supply the required purchasing package. This implies paying attention to the changing demands of the purchasers. For example, Turner (1996) reports that Rover (UK) are pursuing accreditation under BS 7750, the environmental assurance standard, and as a result within the next four years will only deal with suppliers who are likewise accredited or are making serious attempts to so become. There will have to be an emphasis on ongoing cost reductions to yield overall experience curve benefits. Good design and problem solving capabilities are needed increasingly to be able to contribute to the design and development of products and processes as final assemblers adopt concurrent engineering to ensure competitive times to market for new product introductions. Suppliers need to view themselves as playing an important role in the larger value-adding network of the purchasing company with the potential impact and value that the supply network can add in the delivery of products/services to the final customer being recognised.

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