

PURCHASING PRINCIPLES AND MANAGEMENT

Peter Baily & David Farmer

Fourth Edition



For the Institute of Purchasing and Supply

Purchasing Principles and Management

Fourth Edition

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Dedication

To Jill and Pat

Foreword to the Fourth Edition

By I. G. S. Groundwater, Director General,
Institute of Purchasing and Supply

It is only about four years since I wrote a foreword to the previous edition of this book, but it is not surprising that a new edition is needed. Much has happened and is happening this year in the area of purchasing education. The revised education scheme introduced in 1976 is being revised and yet further upgraded this year. Parts I and II of the Diploma become the Foundation stage and Part III becomes the Professional stage. The Foundation stage is a two A-level (or equivalent) entry scheme, examined at the standard of the BEC Higher award; subjects in the Professional stage are examined at degree level. Syllabuses have been revised and updated. A new body, the Association of Supervisors in Purchasing and Supply, is being established, for those working at supervisory level or aiming to do so. These changes are an important part of the process of raising professional standards while continuing to serve those at all levels in purchasing and supply.

This very readable and informative text should be of great value, not only to students, but also to practitioners and those in related interfacing activities and in general management. It is a pleasure to welcome the new edition.

I. G. S. Groundwater
1981

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Part 1 **Objectives and Organization**

1 Purchasing: its Scope and Objectives

Before considering the scope and objective of departments which purchase for organizations today, it will be interesting to take a brief look into business history. Over the past 150 years, industry and business have seen many great innovators. Some conceived radically new ideas in manufacturing technology, in engineering design, in finance or in marketing; a few worked on the still unsolved problems which stem from the human use of human beings in an industrial environment. And some of the great innovators pioneered purchasing techniques and approaches which are still relevant, and indeed important, in our own day and age.

It is not just to provide historical perspective that we begin this text with six brief cameos from Britain and America in the last century and a half, in which both countries were changing from predominantly agricultural economies into great industrial nations. Certainly this was a period fruitful in supply problems, since in it there occurred two world wars in which both countries suffered severe problems in material supply, together with an unprecedented development in technology. In this period, too, the whole of modern manufacturing industry was in the process of being invented. Certainly many countries in the Third World are experiencing similar problems of development today, often exacerbated by the need to import high technology equipment from hard-currency countries. Fascinating as these historical perspectives and parallels can be, our primary purpose is practical.

We believe that there are lessons to be learned from the way successful managers and entrepreneurs of the past tackled their procurement problems: lessons which many of us can apply to the present and future problems we face in our own organizations. One lesson is the importance of vision. These men had the vision to perceive opportunities in supply markets where most of their contemporaries saw only difficulties. They knew how to create and exploit risk and develop genuinely novel and constructive ideas in turbulent economic conditions which made procurement policies fundamental to the success of the organization.

Throughout the period under discussion there was the need for manufacturers, as they developed their own technology, to promote related developments in their supply markets. Sometimes this involved improved or new technical specifications, in others it involved increases in volume or size to levels previously unknown; a major point being that the primitive infrastructure which surrounded businessmen during the last century and

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the early part of this, necessitated supplier development of a fundamental kind.

As production methods improved, so the need for supply assurance increased. As technology advanced, so the originators needed to work closely with their suppliers to ensure that their technical demands were met. In this way a number of companies were established solely by another manufacturer's contracts. As new industries developed, so did their supplying industries. Sometimes these were adaptations from those which already existed, in others the technology was developed 'downstream'. In many cases such developments were a pre-requisite of the economic operation of the buying organization in its new form. Thus, it is not surprising to find entrepreneurial activity in supply markets as well as in sales markets.

Brunel

Isambard Kingdom Brunel (Rolt, 1957) was the engineer responsible for the Great Western Railway and the *SS Great Britain* among many other things. An entrepreneur, he managed the construction of his projects in the widest sense. This involved him in what would now be called 'supplier development'; for example, he converted wooden-ship builders in the West Country into timber-bridge contractors to meet his particular needs. He worked with many suppliers in the development of new techniques, particularly those relating to size; for instance, he caused the erection of a special forge in Glasgow to make a 40-ton forging which he required for his vessel the *Great Eastern*. At the time this was the largest forging ever made.

Brunel also applied what can be recognized as versions of ideas in current use today. He believed in standardization and, for example, on the *Great Eastern* he used only two sizes of angle iron and two thicknesses of plate throughout the entire hull of the ship. He also applied an early form of value analysis, re-positioning plates in order to omit filling strips—then used by convention in shipbuilding. He claimed that this saved 40 tons of iron.

Duke

Brunel's supply problems mostly arose from technological development. Duke faced a challenge of a different nature (Chandler, 1962). In 1881, he bought the first cigarette machine which consumed tobacco at a rate which conventional means of purchasing leaf could not satisfy and he found it difficult to obtain the quantities he required as well as a uniformly high

level of quality. Both quantity and quality were crucial to his production and marketing plans, so he evolved the strategy of buying the output of farmers, working with them to ensure that they harvested leaf of the quality he required. Duke developed a procurement strategy which included quality and supply assurance. This strategy was a pre-requisite of his business success as the first US cigarette baron.

The (US) National Biscuit Company

Developments in this company at the turn of the century compare favourably with concepts which are currently in vogue. For example, the company is said to have enjoyed the benefits of economies of scale because of the detailed attention which was paid to marketing, manufacturing and procurement of raw material, and as Chandler (1962) points out, 'above all, from co-ordinating and integrating these different activities into a unified whole' (cf. Logistics Management). The development of purchasing and supply to meet the increasing activity necessary to keep the system supplied was a vital factor in the success of the company at the time.

General Motors

About the same time Durant, faced with a make-or-buy decision, decided to become an assembler of parts rather than a manufacturer as were his competitors. This resulted in supply problems of many kinds and Durant and his partner were obliged to develop specialist suppliers from the generalists which then formed the market. Like Brunel, they took advantage of the special skills available to them but converted them to manufacturing large numbers of individual items. This involved maintaining quality while gaining the advantages of economies of scale to reduce prices.

However, they went further. They financed some of those conversions and they re-organized the assembly lines and production methods of their new suppliers. In a number of cases they even purchased stands of timber in order that their suppliers might be assured of their own supplies. When his company began to produce motor cars instead of carts, Durant turned many of the companies which he had helped finance and organize from making carriage parts to producing car components. In addition, he persuaded some specialist car-component manufacturers (e.g. sparking plugs) to locate factories near his own. As time went on he bought out several leading supplying companies to ensure his supplies. Once again the dependence of the company on high-volume production necessitated careful attention being paid to supply strategy. Durant was ever aware of this need.

Sears Roebuck

This famous company achieved phenomenal success in selling to the American farmer in the early part of this century and this forced them to manage their supplies more effectively. It resulted in a new approach to procurement. They developed what they called 'Basic Buying', by which the manufacturer was required to produce to a specification which was laid down by Sears. In this way the company increased its control over the products it sold from design to sale. They determined the quality of material and parts which went into the products and controlled schedules and lead times, but rarely resorted to the purchase of equity in their suppliers.

Morris Motors

When Lord Nuffield began to build cars before the First World War, he followed the same strategy as Durant. He became an assembler of parts when all his competitors were manufacturers, and his whole business strategy was built on this. Unlike his competitors, he did not wait until he had orders for cars before he bought components. He helped his suppliers to plan their production but demanded much of them in meeting his own assembly schedules in respect of both time and quality.

His procurement philosophy involved working closely with suppliers in developing components from production and final-assembly aspects as well as function. His biographer claims that he was the first to make systematic use of small suppliers on a large scale and that he gave, for example, Lucas' and Smiths their first major orders.

He, too, was an advocate of standardization. In due course, like Durant, he bought out certain suppliers to ensure his supplies but, in general, attempted to avoid ownership. Again, he 'shaped' his supply market from what was essentially a jobbing industry into batch producers of components to meet his needs. One interesting feature of Lord Nuffield's procurement philosophy was stated in an article which he wrote in 1924:

I believe in facing financial facts; and the fact is that if you do not pay your bills promptly the other man assumes you have not got the money. He therefore determines to make an extra profit out of you to cover what he generally considers an extra risk.

Around this time he was involved in stringent price negotiations with his suppliers to back up reductions in Morris car selling prices—and he was successful.

Some Common Elements

These cameos from just six business histories indicate the role of purchasing in the development of the organization. If they have a common element it is that to achieve business objectives in sales markets, those concerned took the initiative in supply markets. They did not accept the *status quo*. They sought to work with suppliers to mutual advantage while often driving 'hard bargains' with regard to price, quality and delivery. In so doing they looked for new ways to eliminate cost while improving quality.

It could be argued that their motives were defensive and reactive, since they wished to ensure supply and did not act until it was threatened in some way. And that is a perfectly reasonable motive. However, they also promoted specification development and quality improvement. The classical arguments that the market mechanism would ensure the lowest price, highest quality and best service were not for them. They aimed at 'system integration' between buyer and seller. They did not think in functional or departmental terms, but rather saw the business as a whole, including its links forward into sales markets and backward into the supply markets. Financial implications were recognized as important but accounting methodology was not allowed to stifle business strategy. Drucker (1968) states that management 'implies responsibility for attempting to shape the economic environment, for planning, initiating and carrying through changes in that environment, for constantly pushing back the limitations of economic circumstances or the enterprise's freedom of action'. This comment suggests something of the philosophy which we have discussed.

The Role of Purchasing

Drucker's comments link past and present, for just as the businessmen discussed earlier 'pushed back' the limitations of their economic and technical environments, so is such an approach needed today. In the economic environment of the mid-seventies, management initiatives in the supply area may prove fruitful indeed. After all, Morris initiated in the depths of the recession of the 1920s and Duke and Durant when severe supply problems faced them. One lesson is that they saw opportunities in the difficulties which they faced. And they seized those opportunities and effectively managed them to gain commercial advantage over competitors. The role of purchasing in their business was not passive, reactive in a tactical sense and conceived simply as a service to production. It was carried on by the principals of the companies concerned.* Opportunities

* For example, Morris' biographer claims that 'The Cowley enterprise . . . succeeded primarily for two reasons: Morris' instinct for what the public wanted, and his skill as a buyer . . . of materials.'

and problems faced by business today also necessitate careful attention being paid to the management of supply markets.

A study undertaken in 1971–2 (Farmer, 1973) among multi-national manufacturing companies showed a growing awareness of the importance of the supply function as an element in corporate activity; though, in view of previous discussion, perhaps this should be thought of as a renaissance. Undertaken as the survey was before the supply problems of 1973–4, it is probable that the trend has continued, although the recession of the mid-seventies tended to reverse it. Where this has occurred it is an expensive mistake for, as has been illustrated, sales and purchases are not separate activities; effectiveness in one can be quickly negated by ineffectiveness in the other.

There are several reasons for this. Firstly, general levels of inflation throughout the Western World were frighteningly high during the mid-seventies in particular. One effect on industrial buyers, as much as on consumers, was to erode price judgment. Another was to change the established ground rules relating to inventory, yet another to emphasize the importance of cash-flow in the business. Then there was the problem of suppliers being unwilling or unable to enter into long-term contracts.

Secondly, supply markets became more international, which involved difficulties associated with comparative currency changes, sometimes of a turbulent nature. Then the number of potential suppliers operating in particular markets was smaller.

Thirdly, partially because of inflationary trends and partially as a result of a desire to limit the power of individual organizations within a community, there was governmental pressure on selling prices. Firms faced with inflationary conditions sought ways to reduce costs. Since both buyer and supplier were threatened in the same way, it was difficult for the buyer to extract savings at the expense of his supplier. Both can work together, however, to reduce unnecessary costs to mutual advantage.

Fourthly, cost pressures force management to critically examine traditional departmental concepts. It has been said that more problems occur between departments than in them, and the advocates of, for example, Logistics Management, argue for effective integration of activities into a whole. In manufacturing companies, at least, this must include supply management.

The Importance of Materials

Clearly, supply of materials is not as important to some companies as it is to others. However, given that the average manufacturing company disposes of more than half its income on materials, supplies and services, it is significant in most cases.

To take an example:

Suppose that a company has total annual sales of £1m and that it makes a profit on that turnover of 10 per cent, equalling £100,000. The company spends 50 per cent of its turnover on materials and services and is able to effect a saving of 5 per cent on its material costs. The effect of efficiency (or inefficiency) with regard to the company's management of materials can then be shown in the following way:

£1m sales	@ 10% profit	=	£100,000
£500,000 purchases	—5% saving in material costs	=	<u>£ 25,000</u>
Giving a total profit of <u>£125,000</u>			

Now if the saving in material costs* was not achieved while the profit ratio was maintained at 10 per cent, it would be necessary to increase turnover by £25,000 or 25 per cent to produce the same profit figure. Thus a 5 per cent saving in material costs in the average manufacturing company can equate with an increase in turnover of 25 per cent. Which is not to say that we should not be concerned with increasing turnover.

While the validity of this illustration depends upon several factors (e.g. at £1m turnover are the company's production facilities fully committed?), it is a fact that every £1 saved is £1 extra profit. On the other hand, £1 additional turnover will only result in a proportion of that sum as profit. And since the company in the illustration is 'average', a ratio of 1:5 in profit potential is not unusual.

The reader will be able to convert the illustration to figures relating to his own company. Those in chemical or car manufacturing will find that their purchases amount to approximately 70 per cent of turnover, with a proportional increase in potential. Most readers, however, will find that their 'spend' is similar as a proportion of sales to that in the illustration. Whatever that proportion, it should be noted that a 5 per cent increase in material costs which is not recouped in selling prices can have a similarly dramatic negative effect.

The importance of procurement as a key function in the management of a business can be emphasized by considering the total cost of material. This includes the *specification* being purchased. In turn, this may involve marketing and their desire to have an attractive product to sell. It will involve production and their need to minimize disruptions in production. It can involve resulting scrap or waste and even transportation costs. As many Value Analysis studies have shown, the cost-saving potential in this area is considerable and the procurement function has a vital part to play in the search for the optimum specification. One problem in corporate management is that there tend to be dominant functions in particular

* It should be noted that the illustration refers to material costs *not* price.

companies: in one it will be marketing, in another finance or production. This results in that function being given attention at the expense of the overall operation. The procurement function has a part in working towards the optimum specification. This implies not only an attractive product for marketing to sell or for production to manufacture, but one which includes materials or components which are economic to purchase which, in turn, pre-supposes that they are attractive for the supplier to produce. This necessitates some degree of compromise between the parties involved. A weak procurement function which simply purchases that which, for example, production asks of it, is missing the opportunity of contributing in this way. Clearly, it is not for procurement to usurp the design function, or any other, but it should inform the various parties of both the constraints and opportunities relating to the specifications.

Total material cost is also affected by *inventory levels*, and procurement has an important role with respect to stocks of raw materials and bought-in parts—especially in times of rapid inflation. It is for procurement to judge supply-market conditions with a view to assuring the necessary levels of materials to meet production and marketing needs. Price movements, availability, possible shortages or surpluses, physical and financial limitations all need to be considered.

An important point affecting material costs is *timing*—one aspect of this relates to assurance that deliveries of necessary materials will be made to meet production schedules. Since inventory can be looked upon as insurance against supply failure, in theory perfect scheduling of deliveries would eliminate stocks. While this is rarely possible in practice, purchasing can certainly work with suppliers towards this end. This will involve better information flow on manufacturing schedules and fewer changes to those schedules; and, if such changes are inevitable, that they are announced as soon as is possible. Procurement has an important role, too, in informing other functions of the costs related to such changes and working with them to reduce the number.

This includes making every effort to manage both internal and external environments in order to obviate unnecessary costs. For example, one company in the timber industry worked with its main suppliers to arrange shipments in ten one-monthly lots instead of all the material being delivered over a period of four to eight months which had been traditional. Coupled with packages of uniform length, this resulted in significant reductions in average inventory and handling costs.

Buying *price* is probably the factor most often associated with procurement responsibilities. The function has an important role in judging the correct price for any purchase. This aspect of the task is seen at its most dramatic in the commodity markets. Since prices are affected by costs, at least in the long run, an important function of procurement is to work with colleagues and suppliers to eradicate unnecessary costs. These could result