



**A Handbook  
of New Office  
Technology**

*To Mr G and Miss B,  
who will, unfortunately,  
never be able fully to  
appreciate this book.*

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# A Handbook of New Office Technology

John Derrick and Phillip Oppenheim



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## Preface

At a time when the amount and type of equipment becoming available to businesses and other organisations is multiplying at an ever increasing pace, a book such as this is clearly necessary. The aim of the book, which should be of use as much to the small businessman buying one typewriter as to the professional corporate buyer investing in a £100,000 office system, is to explain clearly and simply the nature of the changes that are taking place, at the same time as relating these changes to the actual products. The intention is not to write a technical appreciation, but to present the developments in terms of their applications - that is to say how they work in practice and how they affect the office.

We have divided the book into five parts. Part 1 is a general introduction to the joys of buying equipment and a warning of some of the pitfalls. Part 2 looks at the fundamental causes of the changes in office equipment - a process often referred to as 'digitisation'. Part 3, which is really intended as a reference section, looks at all the main areas of equipment in turn, also relating the way that digital technology is affecting them individually. Then, Part 4 looks at the process known as 'integration' - how the different types of equipment are merging and how this can be important in building office systems, both small and large, as well as how communications are being affected - the development of the so-called 'information technology'. Finally, Part 5 examines two 'invisible' but very important topics of concern to the business buyer. First, we discuss in some detail the relative merits of leasing, rental and outright purchase of business equipment, pointing to the pitfalls and advantages that exist in both cases. Secondly, we look at the all-important areas of service and supplies.

In writing this book we have drawn on the extensive knowledge we have gained as editors of *What to Buy for Business*, the monthly consumer report on business equipment and services which we founded in 1980. Whereas *What to Buy* magazine actually reviews in detail every piece of equipment, making recommendations on what to buy and what to avoid, this book has not attempted to give lengthy run downs on all the models available. We have, however, given brief information on the main suppliers in most areas. Readers wanting more specific information can, of course, refer to *What to Buy* magazine, which thoroughly updates all its surveys to keep abreast of the rapid changes. Anyone wanting to find out more about *What to*



*Buy* should write to us asking for details (What to Buy for Business, 11 Kings Road, London SW3).

Next, a word on how to use the book. As has been said, it is in five main parts and we have tried to write it in 'modular' form, which is to say that any one of the parts can profitably be read separately. If, for example, you already have a knowledge of digital technology, there is really no need to read Part 2. Likewise, Part 3 is very much meant to be used as a reference section and not ploughed through in one go. We have purposely gone into each of the different types of equipment in some detail in this section because we see little point in skimming lightly over areas where organisations are likely to spend thousands of pounds. Though some of the chapters in this section are long, we feel that the time needed to read them will be more than adequately rewarded in terms of time and money saved later on. It should also be said that, though there is considerable cross-referencing from one chapter and part of the book to another, we have also often repeated explanations for the benefit of readers who don't want to refer back or who haven't read previous chapters. Therefore, for example, though Chapters 8 and 9 on computers look at computer networks and communications, both areas are gone into in more detail in Part 4 which has chapters devoted to these subjects.

Finally, we would like to express our thanks to the many people who have directly or indirectly assisted us with the preparation of this book. It would be invidious to single out names of people from the manufacturers and distributors of the systems and equipment we cover, but we clearly rely on their assistance for our research both for this book and for *What to Buy* magazine. Naturally, not all our views endear us to all those within the business equipment industry, but we hope that even our critics will find the book stimulating. We would, however, like to mention in particular Mr. Howard Kleyn of Cable & Wireless plc and the Press Office at British Telecom, both of whom made detailed comments on the original draft of Chapter 10, though the final contents of this chapter are, of course, our responsibility entirely. We would also like to express our appreciation to the subscribers to *What to Buy* magazine, who constantly alert us to problems they encounter on equipment and whose feedback over the past two years has been invaluable.

Our special thanks too to all those at Kogan Page, our hardback publishers, and Century Publishing, who are bring out the paperback edition. Finally, and not least, our thanks to Tracey Baines, Arabella Faber and Simon McGuigan Burns, whose work and tireless efforts have contributed so much to the success of *What to Buy* magazine and hence to the development of this book.

**John Derrick  
Phillip Oppenheim**

**London, July 1982**

## PART 1: THE CONSUMER IN THE OFFICE

### 1

#### Consumerism in Business Equipment

Although 'consumerism' in its broadest sense had a boom time in the sixties and seventies as far as private individuals went, it more or less by-passed business purchasing altogether. The devout subscriber to *Which?* left his consumerist hat on the peg when he arrived for work.

One of the reasons for this is that to some, the term 'consumerism' has an anti-corporate air to it. There are those who call themselves 'consumerists' who sometimes seem to operate on the basis that companies and individuals are on different sides of a fence, so that the idea of corporate consumers is effectively self-contradictory. In fact, anti-business consumerism has declined somewhat, after reaching its peak in the early seventies when Naderism ran wild (though, ironically, this type of consumerism turned out to be big business for some of its practitioners who did very well out of it).

Likewise, the supposed linkage between consumerism and certain political elements has tended to create the impression that companies themselves cannot be 'consumers'. Thus, ecological movements, socialists and others have at times sought to link in with consumerism for tactical reasons, when, in reality, there is no logical connection at all.

Consumerism is, in fact, not a political expression of any sort. The only qualification needed to be a consumerist is to hold the view that buyers of goods and services should have their interests protected under the law and that they should have access to sufficient information to enable them to choose goods and services on a rational basis and not merely to be victims of sophisticated marketing techniques. Thus, a consumer need not only be a private individual buying a fridge or a motor car, but can just as easily be a company buying a copier or a computer.

However, the second reason why consumerism didn't really take off in the office when it did in people's homes is that until fairly recently, few companies actually had access to many types or makes of business equipment, and so the need for it wasn't there. This was because technology was less advanced and because most types of equipment used to cost far more than they do now. Although nowadays you can hardly read a magazine or a newspaper without seeing advertisements for copiers, computers and many other types of equipment besides, it is worth remembering that only ten years ago, the life of a business buyer was completely different - and a lot simpler too. Then, any

company wanting what was then a modern typewriter wouldn't have had far to look. IBM had the patents on golfball typewriters, so they were the only people who made them. Likewise, anyone wanting a proper plain paper copier then would have had to have a Xerox, because that was all you could get.

### **Technological change and consumerism**

Times have changed, however. First of all, there are now literally dozens of manufacturers of traditional types of equipment such as typewriters, copiers and so forth, with scores of models between them. But more significantly still, there are also whole new areas of equipment to consider, which, only a few years ago, would have been beyond the dreams of all but the largest companies. For the rapid technological changes brought about by advances in micro-electronics have led, as we all know, to a major revolution in the way in which business is conducted and administered. Some call this the 'information technology' revolution, but businesses probably know it best by its results - the widespread availability of comparatively inexpensive yet powerful computers, and the application of the same technology to other types of equipment, ranging from typewriters to vending machines and from postal scales to cash tills.

One by-product of this revolution which is often overlooked is simply that it makes it far more difficult to choose equipment. For the buyer who previously only had to choose between a few Xerox machines and decide which options to have on his IBM typewriter now faces - quite literally - hundreds of possible suppliers of equipment with offerings within the budget of even comparatively small businesses. Yet one of the ironies of the information technology revolution is that useful information about info tech products can be extremely hard to come by. The consumer therefore finds it very difficult to know what to buy.

More than that, the buyer has to understand the pros and cons of all sorts of different types of equipment before he can even begin to make a choice of what is best to buy. What is the difference between a microcomputer and a minicomputer? What about so-called 'personal computers'? What is the difference between a word processor and a computer? What about electronic typewriters with memories? Would a facsimile machine be better than telex? What's all this about a telex replacement called 'teletex', and why does this have a major bearing on what type of computer to buy? What does the integration of office equipment actually mean? Moving down the technological ladder a little, the buyer looking at copiers, for example, may be unaware of the crucial difference between a wet toner model and a dry toner one. And so it goes on. Anyone buying business equipment nowadays has to understand concepts far more complex than was the case only a few years ago.

That is why consumerism in business has now become so important.

For with so many choices and faced with decisions of such a complicated nature, the buyer needs far more information and advice. He also faces a far greater risk of taking the wrong path, possibly on account of the fact that equipment suppliers frequently take advantage of the layman's lack of detailed knowledge. This link between new technology and consumerism is important, and it is central to the way in which we approach business equipment, both in this book and in our monthly publication, *What to Buy for Business*.

### **Avoiding the pitfalls**

Business equipment is currently one of the main growth areas in western economies. It is also an intensely competitive area, with many vendors fighting one another for good rewards. The eagerness with which they pursue their goals, coupled with the fact that many business buyers, quite understandably, do not fully understand the equipment they have to choose between, means that there are a number of pitfalls for the unwary punter. Anyone who goes out and buys business equipment without knowing of these could end up buying the wrong equipment and/or paying far too much. In the rest of this chapter, we will give some examples of the type of problem you may be up against.

### **Branding**

Take branding, for example. Few people are aware of the extent to which in some areas, many competing machines sold under different brand names are, in fact, the *identical* models from the same factories. Take copiers, for example. The last time we made a detailed count, we found that out of 115 models on the market, no less than 59 could be bought under at least two brand names. There's nothing wrong with that as such, but it is worth knowing, as quite often there are significant differences in price for the same machine depending on which brand name you go for. Yet the distributors rarely make it clear that all they are doing is sticking their name onto other people's equipment. Typically, their brochures refer to 'our new copier' or 'our greatest achievement yet'.

The following illustrates the extent of branding. Imperial Business Equipment, once Britain's premier typewriter and office equipment manufacturer, have long ceased to manufacture anything, and almost everything they sell is imported, largely from West Germany and Japan, and branded. Their typewriters are identical to the Adler and Triumph models. Their copiers are made by Mita of Japan, which, as well as being sold in Britain under the Mita brand name, are also sold under the brand names of Gestetner, Adler, Olivetti, Kardex and Océ. Océ, in turn, have also been selling machines made by Saxon in America, but Saxon themselves are shortly to start selling machines made by Panasonic, which are also sold by Panasonic themselves and by Olympia. Olympia, in turn, also brand a copier made in Japan by Cybernet, which can also be bought as a Saxon as well as under the

Facit, Roneo, Decimo and Hermes brand names. Hermes are now branding an Olivetti electronic typewriter, and Olivetti, in turn, brand copiers made by Sharp. Sharp have been using copier technology licensed by Canon, who also make a machine sold under the Copyer/Selex brand name.

However, Copyer themselves make a copier branded by Agfa. But Agfa, in turn, make a copier branded by AB Dick, who sell it for much less than Agfa do, and who also brand another one made by Minolta. Another Minolta copier is also branded by Regma, who don't make anything but also brand copiers made by KIP, while a different Minolta is also branded by Lumoprint, and that takes us back to AB Dick, who also sell the same machine but who, in addition, brand certain reprographic equipment made by Eskofot. This equipment is also sold under the Eskofot brand name, as well as being branded by Ryobi and Gestetner. Continuing on the path, Gestetner also brand platemaking equipment sold by Ricoh, whose wet toner copiers are also branded by Nashua and Kalle Infotec, and whose screenless word processors were branded by Nexos, until Nexos packed up in 1982. The Nexos screen word processor, in turn, made by Logica, is now sold by ICL, whose 'Personal Computer' is made under licence from RAIR, and which is basically the same as the RAIR 'Black Box' computer.

Confused? But that's only one illustration of the branding game, which, if nothing else, does keep numerous marketing departments busily employed making up sham model numbers for other people's machines and writing sales literature to lead the unwary buyer to believe that their machines are something special and unique. Often companies will resort to extraordinary lengths to conceal the fact that all they do is brand other people's equipment. Thus Nashua, mentioned above, use the slogan 'Worldwide Leadership In Office Copying Systems', despite the fact that they don't actually make copiers. Yet absurd as all of this may sound, it is more than a joke but also a practice which can work against buyers' interests. For quite apart from the fact that the same machine may be sold at widely different prices depending on the brand name it appears under, the buyer can waste a lot of time looking at the same machine more than once, in addition to which constant branding raises prices by duplicating marketing and overhead costs.

There are several reasons why companies choose to brand other people's equipment. Sometimes, a manufacturer wants to fill a gap in its model range and finds it easier to buy in a machine rather than develop a new one. On other occasions, companies don't make any machines themselves but buy everything in. Likewise, other companies might make certain types of equipment, but not others, so they make some and brand others in order to have an overall presence in the business equipment market.

You may come across the phrase 'OEM' used in this context.

Surprisingly in view of the fact that an OEM company is one that brands another company's products, this stands for 'original equipment manufacturer'. The term OEM is used particularly in the computer market, where branding is rife, though the reasons for branding are slightly different in this case from, say, copiers. We discuss computer OEMs in their own right in Chapter 9.

### **Obsolete and overpriced equipment**

Buying a piece of equipment and finding that you could have got it for less under a different brand name is particularly annoying. But equally frustrating can be buying something only to find it is obsolete - particularly as obsolete products are nowadays often more expensive than the more up to date ones that replace them. Take this example. Not long ago, you could hardly pick up a newspaper without seeing a large advertisement for a low level screenless word processor called the Olivetti TES-401, for which Olivetti were asking a steep £4,595. At the time, anyone who had asked us wouldn't have bought this model, as it was by then heavily overpriced, obsolete and due to be dropped by Olivetti (not that they admitted this, but we actually knew that they had a new machine under wraps). Not surprisingly, Olivetti were none too pleased when our advice to this effect appeared in *What to Buy for Business*. Yet within a few months, Olivetti had not only dropped this model in favour of something newer, better and cheaper, but were also dumping the old one through dealers at a knock-down end user price of only £1,900, which actually made it fairly good value. Olivetti's advertisements apparently worked very well and a lot of people bought the machine at the high price.

Take facsimile for another example. Fax machines, which allow you to transmit documents over the telephone lines so that the image put in the machine at one end is 'copied' at the other end, always work at one of three speeds. During 1980, the fastest machines could only send material to fax machines of the same make, as there was no common standard. A new standard for all makes was due to come into effect late that year - yet despite this, right until the last moment, the fax companies were happily selling the old non-compatible machines to clear their stocks without telling anyone that these models were about to become obsolete. To add insult to injury, the new machines which they began to introduce in 1981 in most cases cost just over half the price of the older ones! This sort of thing goes on all the time, and it is a further example of how, in order to be sure of getting a good deal, the buyer of business equipment nowadays needs far more information than he needed only a few years ago when technological developments occurred less frequently.

Another way you can end up paying more than you should is when equipment is sold over the manufacturer's list price. In copiers, for example, it is by no means unusual for some dealers to sell machines at several hundred pounds over the list price, even when discounts on the

machine in question can be readily had elsewhere. When confronted with this misdeed, the dealer will often tend to justify his price by making spurious claims about superior service when, in fact, the service he gives is no better than the service provided by other dealers who sell at or below the list price, in addition to which this argument is specious anyway as service is something you pay for afterwards in the form of a service contract or parts and labour charges.

In other areas, you can still be taken for a ride even where the dealer does stick to the official price. Discounting in some areas is so high that only a mug actually pays the list price. Nowhere is this more so than in typewriters, where buyers should aim to pay not much more than £500 on machines that list officially at over £800. However, many dealers who will readily agree to a hefty discount if one is asked for, nonetheless try to get the full list price off the punter who supposes that the price asked is the price to pay. Even where the buyer is aware that discounts can be had, he or she often congratulates himself on getting 10% off, not knowing that a discount of three times that amount would be more like it. This is a classic case of where the buyer without reliable information about the products and the market-place can end up paying a lot more than he or she should. It is remarkably similar to the way in which innocent tourists can be fleeced in an eastern bazaar.

In other areas, discounts aren't so common, yet pricing pitfalls still abound. Sometimes, equipment isn't particularly obsolete, but is simply heavily overpriced. At the time of writing, there were some good examples of this in word processing. Take two machines, the Xerox 821 and the Case System 3000. Both have the same amount of internal memory and the same size of processor, two important factors governing the price of a system. The Xerox has a bigger sized screen than the Case. The Case has slightly more floppy disk capacity than the Xerox, but for a few hundred pounds extra, the Xerox's disk capacity could be made rather greater than the Case's. Both systems offer hard disk options and both are expandable. Both have fast printers. Both meet all standard word processing applications. In other words, although there are obviously differences between the two machines, one might imagine that they would fall in roughly the same price sector of the market.

Yet the Case system costs *more than twice* the price of the Xerox - £8,000-£9,000 as against around £3,800. It may be that if the two systems cost the same, or if the Case was up to £1,000 more expensive than the Xerox, we would recommend the Case. We don't deny that it is a very good word processor, and it does have certain software features not found on the Xerox, but price differences of this extent cannot be justified from the buyer's point of view. This illustrates how the buyer who doesn't get a proper feel for the market can end up paying far more than he needs. It all underlines the fact that in the age of information technology, the one thing the buyer needs to get a good deal is *information* about the myriad of info tech products.



### Other pitfalls

We could write this whole book about pitfalls and nothing else, citing countless specific instances that we have come across as editors of *What to Buy for Business*. We will, however, confine ourselves to only a few examples, but we would like to cover one or two further areas of danger to the buyer. One of these is that some manufacturers and distributors of business equipment not only don't encourage competition, but also take extraordinary steps to prevent it. The copier supplies market is where probably the worst restrictive practices occur. Many machine suppliers tie the supply of 'toner' (the 'ink' which copiers use) to the supply of parts, thus preventing dealers and end users from being able to shop around. Toner prices are kept artificially high, and we estimate that British businesses end up paying £6 million a year more for their toner than they would if proper competition existed, as it does in the USA where such restrictive practices are illegal.

On a slightly different note, Pitney Bowes, the largest of only three main suppliers of franking machines, smashes up machines it accepts as trade-ins, and this has the effect of hindering the development of a second hand market. As a result, very few second hand frankers are available, even though this is one area where second hand equipment can make sense and despite the fact that there is a thriving second hand market in other countries, such as the United States, where laws governing this type of thing are different. Readers can draw their own conclusions as to what effect the absence of a second hand market has on the price of new machines.

A further pitfall is the danger of buying equipment that is reconditioned but which is sold as though it was new. For example, most of the under-£10,000 office copier models sold by Rank Xerox over the past few years have, in fact, all been reconditioned trade-ins. Yet until recently, Xerox's advertising and sales literature failed to make this clear and many buyers bought reconditioned Xerox machines thinking that they were new. As a result of pressure brought by *What to Buy for Business*, Rank Xerox have now adopted a more open policy since the middle of 1981, but there are other situations like this, in areas as diverse as coffee machines and telephone answering machines, and so the message once again is simple - buyer beware!

And then there is, of course, the outright con. Take this example. Early in 1982, an advertisement began being run in national newspapers that appeared to be placed by a respectable sounding body called the 'Office Copier Advisory Bureau', which invited readers to return a coupon in order to get sent something called 'The Plain Man's Guide To Office Copiers' which, by implication, offered impartial advice on the prices and specifications of over 100 plain paper copiers. Yet, investigation showed that this so-called 'Bureau' was only a front for Kalle Infotec, who, as you may recall from earlier on in this chapter, brand Ricoh made copiers which are also sold by Nashua.



Kalle set up the bogus Bureau in order to get sales leads for their far from inspiring range of so-called 'plain paper' copiers. We say 'so-called', incidentally, because these copiers, which use a wet toner process, can't actually copy satisfactorily onto ordinary plain paper, despite sales claims made to the contrary. False sales claims are, however, another matter, and if we start going into those here, this book may be in danger of running into a second volume.

### **Concluding consumerism**

Consumerism in business equipment is a necessary approach in order to get to grips with a subject that has become far more complicated as a result of rapid technological advances in recent years. These have left the buyer with a far wider and more complex choice of equipment and actual models than he or she has ever had in the past. Add to this the various pitfalls of the kind described above, and you begin to realise why you should be just as consumer conscious in the office as you are at home, even if you are only buying a typewriter or small quantities of stationery. We hope that this book will help you get the best deal in business equipment, and readers can, of course, refer to the detailed model reports in the monthly editions of *What to Buy for Business* for more specific and totally up to date information and advice on each area.